SEQUENCE LISTING

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<120> Novel Card Domain Containing
Polypeptides, Encoding Nucleic Acids, and Methods of Use

<130> P-LJ 4752

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<151> 2000-05-24

<150> US 09/686,347
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aag ttg ctt gaa atc ctt caa cat gat cct gat tct atc tta gac acg   96
Lys Leu Leu Glu Ile Leu Gln His Asp Pro Asp Ser Ile Leu Asp Thr
             20                  25                  30

tta act tct cgg agg ctg att tct gag gaa gag tat gag act ctg gag   144
Leu Thr Ser Arg Arg Leu Ile Ser Glu Glu Glu Tyr Glu Thr Leu Glu
         35                  40                  45

aat gtt aca gat ctc ctg aag aaa agt cgg aag ctg tta att ttg gta   192
Asn Val Thr Asp Leu Leu Lys Lys Ser Arg Lys Leu Leu Ile Leu Val
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cag aaa aag gga gag gcg acc tgt cag cat ttt ctc aag tgt tta ttt   240
Gln Lys Lys Gly Glu Ala Thr Cys Gln His Phe Leu Lys Cys Leu Phe
 65                  70                  75                  80

agt act ttt cca cag tca gct gcc att tgc ggc tta agg cat gaa gtt   288
Ser Thr Phe Pro Gln Ser Ala Ala Ile Cys Gly Leu Arg His Glu Val
                 85                  90                  95

tta aaa cat gag aat aca gta cct cct caa tct atg ggg gca agc agt   336
Leu Lys His Glu Asn Thr Val Pro Pro Gln Ser Met Gly Ala Ser Ser
            100                 105                 110

aat tca gaa gat gct ttt tct cct gga ata aaa cag cct gaa gcc cct   384
Asn Ser Glu Asp Ala Phe Ser Pro Gly Ile Lys Gln Pro Glu Ala Pro
        115                 120                 125

gag atc aca gtg ttc ttc agt gag aag gaa cac ttg gat ttg gaa acc   432
Glu Ile Thr Val Phe Phe Ser Glu Lys Glu His Leu Asp Leu Glu Thr
    130                 135                 140

tct gag ttt ttc agg gac aag aaa act agt tat agg gaa aca gct ttg   480
Ser Glu Phe Phe Arg Asp Lys Lys Thr Ser Tyr Arg Glu Thr Ala Leu
145                 150                 155                 160

tct gcc agg aag aat gag aag gaa tat gac aca cca gaa gtc aca tta   528
Ser Ala Arg Lys Asn Glu Lys Glu Tyr Asp Thr Pro Glu Val Thr Leu
                165                 170                 175

tca tat tca gtt gag aaa gtt gga tgt gaa gtt cca gca act att aca   576
Ser Tyr Ser Val Glu Lys Val Gly Cys Glu Val Pro Ala Thr Ile Thr
            180                 185                 190

tat ata aaa gat gga cag aga tat gag gag cta gat gat tct tta tac   624
Tyr Ile Lys Asp Gly Gln Arg Tyr Glu Glu Leu Asp Asp Ser Leu Tyr
        195                 200                 205

tta gga aaa gag gaa tat cta gga tct gtt gac acc cct gaa gat gca   672
Leu Gly Lys Glu Glu Tyr Leu Gly Ser Val Asp Thr Pro Glu Asp Ala
    210                 215                 220

gaa gcc act gtg gaa gag gag gtt tat gat gac cca gag cac gtt gga   720
Glu Ala Thr Val Glu Glu Glu Val Tyr Asp Asp Pro Glu His Val Gly
225                 230                 235                 240

tat gat ggt gaa gag gac ttc gag aat tca gaa acc aca gag ttc tct   768
Tyr Asp Gly Glu Glu Asp Phe Glu Asn Ser Glu Thr Thr Glu Phe Ser
                245                 250                 255

ggt gaa gaa cca agt tat gag gga tca gaa acc agc ctt tca ttg gag   816
Gly Glu Glu Pro Ser Tyr Glu Gly Ser Glu Thr Ser Leu Ser Leu Glu
            260                 265                 270
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gag gaa cag gag aaa agt ata gaa ggc tgg tct cga act cat ggg ctt   864
Glu Glu Gln Glu Lys Ser Ile Glu Gly Trp Ser Arg Thr His Gly Leu
        275                 280                 285

aag cga tcc tcc cac gtt ggc ctc cca aag tgc tgg gat tac agg cgt   912
Lys Arg Ser Ser His Val Gly Leu Pro Lys Cys Trp Asp Tyr Arg Arg
    290                 295                 300

gag cca ccc tgc ctg gcc tgaaaattct gcctcaaaca tctcaaacat          960
Glu Pro Pro Cys Leu Ala
305                 310

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Leu Thr Ser Arg Arg Leu Ile Ser Glu Glu Glu Tyr Glu Thr Leu Glu
        35                  40                  45
Asn Val Thr Asp Leu Leu Lys Lys Ser Arg Lys Leu Leu Ile Leu Val
    50                  55                  60
Gln Lys Lys Gly Glu Ala Thr Cys Gln His Phe Leu Lys Cys Leu Phe
65                  70                  75                  80
Ser Thr Phe Pro Gln Ser Ala Ala Ile Cys Gly Leu Arg His Glu Val
                85                  90                  95
Leu Lys His Glu Asn Thr Val Pro Pro Gln Ser Met Gly Ala Ser Ser
            100                 105                 110
Asn Ser Glu Asp Ala Phe Ser Pro Gly Ile Lys Gln Pro Glu Ala Pro
        115                 120                 125
Glu Ile Thr Val Phe Phe Ser Glu Lys Glu His Leu Asp Leu Glu Thr
    130                 135                 140
Ser Glu Phe Phe Arg Asp Lys Lys Thr Ser Tyr Arg Glu Thr Ala Leu
145                 150                 155                 160
Ser Ala Arg Lys Asn Glu Lys Glu Tyr Asp Thr Pro Glu Val Thr Leu
                165                 170                 175
Ser Tyr Ser Val Glu Lys Val Gly Cys Glu Val Pro Ala Thr Ile Thr
            180                 185                 190
Tyr Ile Lys Asp Gly Gln Arg Tyr Glu Glu Leu Asp Asp Ser Leu Tyr
        195                 200                 205
Leu Gly Lys Glu Glu Tyr Leu Gly Ser Val Asp Thr Pro Glu Asp Ala
    210                 215                 220
Glu Ala Thr Val Glu Glu Glu Val Tyr Asp Asp Pro Glu His Val Gly
225                 230                 235                 240
Tyr Asp Gly Glu Glu Asp Phe Glu Asn Ser Glu Thr Thr Glu Phe Ser
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                245                 250                 255
Gly Glu Glu Pro Ser Tyr Glu Gly Ser Glu Thr Ser Leu Ser Leu Glu
            260                 265                 270
Glu Glu Gln Glu Lys Ser Ile Glu Gly Trp Ser Arg Thr His Gly Leu
        275                 280                 285
Lys Arg Ser Ser His Val Gly Leu Pro Lys Cys Trp Asp Tyr Arg Arg
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Glu Pro Pro Cys Leu Ala
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tacttacttt gtcccttca 19

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tatttgtccc catctcgtc 19

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cggaattcat ggctaccgag agtactcc 28

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gtaaaacgac ggccagt 17

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gtc gag ctg ctg gtc tca ggg tcc ctg gaa ggc ttc gag agt gtc ctg 96
Val Glu Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu
20 25 30

gac tgg ctg ctg tcc tgg gag gtc ctc tcc tgg gag gac tac gag ggc 144
Asp Trp Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly
35 40 45

ttc cac ctc ctg ggc cag cct ctc tcc cac ttg gcc agg cgc ctt ctg 192
Phe His Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu
50 55 60

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gac acc gtc tgg aat aag ggt act tgg gcc tgt cag aag ctc atc gcg   240
Asp Thr Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu Ile Ala
 65                  70                  75                  80

gct gcc caa gaa gcc cag gcc gac agc cag tcc ccc aag ctg cat ggc   288
Ala Ala Gln Glu Ala Gln Ala Asp Ser Gln Ser Pro Lys Leu His Gly
                85                  90                  95

tgc tgg gac ccc cac tcg ctc cac cca gcc cga gac ctg cag agt cac   336
Cys Trp Asp Pro His Ser Leu His Pro Ala Arg Asp Leu Gln Ser His
            100                 105                 110

cgg cca gcc att gtc agg agg ctc cac agc cat gtg gag aac atg ctg   384
Arg Pro Ala Ile Val Arg Arg Leu His Ser His Val Glu Asn Met Leu
        115                 120                 125

gac ctg gca tgg gag cgg ggt ttc gtc agc cag tat gaa tgt gat gaa   432
Asp Leu Ala Trp Glu Arg Gly Phe Val Ser Gln Tyr Glu Cys Asp Glu
    130                 135                 140

atc agg ttg ccg atc ttc aca ccg tcc cag agg gca aga agg ctg ctt   480
Ile Arg Leu Pro Ile Phe Thr Pro Ser Gln Arg Ala Arg Arg Leu Leu
145                 150                 155                 160

gat ctt gcc acg gtg aaa gcg aat gga ttg gct gcc ttc ctt cta caa   528
Asp Leu Ala Thr Val Lys Ala Asn Gly Leu Ala Ala Phe Leu Leu Gln
                165                 170                 175

cat gtt cag gaa tta cca gtc cca ttg gcc ctg cct ttg gaa gct gcc   576
His Val Gln Glu Leu Pro Val Pro Leu Ala Leu Pro Leu Glu Ala Ala
            180                 185                 190

aca tgc aag aag tat atg gcc aag ctg agg acc acg gtg tct gct cag   624
Thr Cys Lys Lys Tyr Met Ala Lys Leu Arg Thr Thr Val Ser Ala Gln
        195                 200                 205

tct cgc ttc ctc agt acc tat gat gga gca gag acg ctc tgc ctg gag   672
Ser Arg Phe Leu Ser Thr Tyr Asp Gly Ala Glu Thr Leu Cys Leu Glu
    210                 215                 220

gac ata tac aca gag aat gtc ctg gag gtc tgg gca gat gtg ggc atg   720
Asp Ile Tyr Thr Glu Asn Val Leu Glu Val Trp Ala Asp Val Gly Met
225                 230                 235                 240

gct gga ccc ccg cag aag agc cca gcc acc ctg ggc ctg gag gag ctc   768
Ala Gly Pro Pro Gln Lys Ser Pro Ala Thr Leu Gly Leu Glu Glu Leu
                245                 250                 255

ttc agc acc cct ggc cac ctc aat gac gat gcg gac act gtg ctg gtg   816
Phe Ser Thr Pro Gly His Leu Asn Asp Asp Ala Asp Thr Val Leu Val
            260                 265                 270

gtg ggt gag gcg ggc agt ggc aag agc acg ctc ctg cag cgg ctg cac   864
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Val Gly Glu Ala Gly Ser Gly Lys Ser Thr Leu Leu Gln Arg Leu His
        275                 280                 285

ttg ctg tgg gct gca ggg caa gac ttc cag gaa ttt ctc ttt gtc ttc   912
Leu Leu Trp Ala Ala Gly Gln Asp Phe Gln Glu Phe Leu Phe Val Phe
    290                 295                 300

cca ttc agc tgc cgg cag ctg cag tgc atg gcc aaa cca ctc tct gtg   960
Pro Phe Ser Cys Arg Gln Leu Gln Cys Met Ala Lys Pro Leu Ser Val
305                 310                 315                 320

cgg act cta ctc ttt gag cac tgc tgt tgg cct gat gtt ggt caa gaa   1008
Arg Thr Leu Leu Phe Glu His Cys Cys Trp Pro Asp Val Gly Gln Glu
                325                 330                 335

gac atc ttc cag tta ctc ctt gac cac cct gac cgt gtc ctg tta acc   1056
Asp Ile Phe Gln Leu Leu Leu Asp His Pro Asp Arg Val Leu Leu Thr
            340                 345                 350

ttt gat ggc ttt gac gag ttc aag ttc agg ttc acg gat cgt gaa cgc   1104
Phe Asp Gly Phe Asp Glu Phe Lys Phe Arg Phe Thr Asp Arg Glu Arg
        355                 360                 365

cac tgc tcc ccg acc gac ccc acc tct gtc cag acc ctg ctc ttc aac   1152
His Cys Ser Pro Thr Asp Pro Thr Ser Val Gln Thr Leu Leu Phe Asn
    370                 375                 380

ctt ctg cag ggc aac ctg ctg aag aat gcc cgc aag gtg gtg acc agc   1200
Leu Leu Gln Gly Asn Leu Leu Lys Asn Ala Arg Lys Val Val Thr Ser
385                 390                 395                 400

cgt ccg gcc gct gtg tcg gcg ttc ctc agg aag tac atc cgc acc gag   1248
Arg Pro Ala Ala Val Ser Ala Phe Leu Arg Lys Tyr Ile Arg Thr Glu
                405                 410                 415

ttc aac ctc aag ggc ttc tct gaa cag ggc atc gag ctg tac ctg agg   1296
Phe Asn Leu Lys Gly Phe Ser Glu Gln Gly Ile Glu Leu Tyr Leu Arg
            420                 425                 430

aag cgc cat cat gag ccc ggg gtg gcg gac cgc ctc atc cgc ctg ctc   1344
Lys Arg His His Glu Pro Gly Val Ala Asp Arg Leu Ile Arg Leu Leu
        435                 440                 445

caa gag acc tca gcc ctg cac ggt ttg tgc cac ctg cct gtc ttc tca   1392
Gln Glu Thr Ser Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser
    450                 455                 460

tgg atg gtg tcc aaa tgc cac cag gaa ctg ttg ctg cag gag ggg ggg   1440
Trp Met Val Ser Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly
465                 470                 475                 480

tcc cca aag acc act aca gat atg tac ctg ctg att ctg cag cat ttt   1488
Ser Pro Lys Thr Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe
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                485                 490                 495

ctg ctg cat gcc acc ccc cca gac tca gct tcc caa ggt ctg gga ccc   1536
Leu Leu His Ala Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro
            500                 505                 510

agt ctt ctt cgg ggc cgc ctc ccc acc ctc ctg cac ctg ggc aga ctg   1584
Ser Leu Leu Arg Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu
        515                 520                 525

gct ctg tgg ggc ctg ggc atg tgc tgc tac gtg ttc tca gcc cag cag   1632
Ala Leu Trp Gly Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln
    530                 535                 540

ctc cag gca gca cag gtc agc cct gat gac att tct ctt ggc ttc ctg   1680
Leu Gln Ala Ala Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu
545                 550                 555                 560

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<213> Homo sapien

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            20                  25                  30
Asp Trp Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly
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35 40 45
Phe His Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu
50 55 60
Asp Thr Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu Ile Ala
65 70 75 80
Ala Ala Gln Glu Ala Gln Ala Asp Ser Gln Ser Pro Lys Leu His Gly
85 90 95
Cys Trp Asp Pro His Ser Leu His Pro Ala Arg Asp Leu Gln Ser His
100 105 110
Arg Pro Ala Ile Val Arg Arg Leu His Ser His Val Glu Asn Met Leu
115 120 125
Asp Leu Ala Trp Glu Arg Gly Phe Val Ser Gln Tyr Glu Cys Asp Glu
130 135 140
Ile Arg Leu Pro Ile Phe Thr Pro Ser Gln Arg Ala Arg Arg Leu Leu
145 150 155 160
Asp Leu Ala Thr Val Lys Ala Asn Gly Leu Ala Ala Phe Leu Leu Gln
165 170 175
His Val Gln Glu Leu Pro Val Pro Leu Ala Leu Pro Leu Glu Ala Ala
180 185 190
Thr Cys Lys Lys Tyr Met Ala Lys Leu Arg Thr Thr Val Ser Ala Gln
195 200 205
Ser Arg Phe Leu Ser Thr Tyr Asp Gly Ala Glu Thr Leu Cys Leu Glu
210 215 220
Asp Ile Tyr Thr Glu Asn Val Leu Glu Val Trp Ala Asp Val Gly Met
225 230 235 240
Ala Gly Pro Pro Gln Lys Ser Pro Ala Thr Leu Gly Leu Glu Glu Leu
245 250 255
Phe Ser Thr Pro Gly His Leu Asn Asp Asp Ala Asp Thr Val Leu Val
260 265 270
Val Gly Glu Ala Gly Ser Gly Lys Ser Thr Leu Leu Gln Arg Leu His
275 280 285
Leu Leu Trp Ala Ala Gly Gln Asp Phe Gln Glu Phe Leu Phe Val Phe
290 295 300
Pro Phe Ser Cys Arg Gln Leu Gln Cys Met Ala Lys Pro Leu Ser Val
305 310 315 320
Arg Thr Leu Leu Phe Glu His Cys Cys Trp Pro Asp Val Gly Gln Glu
325 330 335
Asp Ile Phe Gln Leu Leu Leu Asp His Pro Asp Arg Val Leu Leu Thr
340 345 350
Phe Asp Gly Phe Asp Glu Phe Lys Phe Arg Phe Thr Asp Arg Glu Arg
355 360 365
His Cys Ser Pro Thr Asp Pro Thr Ser Val Gln Thr Leu Leu Phe Asn
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385 390 395 400
Arg Pro Ala Ala Val Ser Ala Phe Leu Arg Lys Tyr Ile Arg Thr Glu
405 410 415
Phe Asn Leu Lys Gly Phe Ser Glu Gln Gly Ile Glu Leu Tyr Leu Arg
420 425 430
Lys Arg His His Glu Pro Gly Val Ala Asp Arg Leu Ile Arg Leu Leu
435 440 445
Gln Glu Thr Ser Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser
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Trp Met Val Ser Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly
465                 470                 475                 480
Ser Pro Lys Thr Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe
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Leu Leu His Ala Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro
            500                 505                 510
Ser Leu Leu Arg Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu
        515                 520                 525
Ala Leu Trp Gly Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln
    530                 535                 540
Leu Gln Ala Ala Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu
545                 550                 555                 560


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<212> DNA
<213> Homo sapien

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cggaggctga tttctgagga agagtatgag actctggaga atgttacaga tctcctgaag 240
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ctcaagtgtt tatttagtac ttttccacag tcagctgcca tttgcggctt aaggcatgaa 360
gttttaaaac atgagaatac agtacctcct caatctatgg gggcaagcag taattcagaa 420
gatgcttttt ctcctggaat aaaacagcct gaagcccctg agatcacagt gttcttcagt 480
gagaaggaac acttggattt ggaaacctct gagtttttca gggacaagaa aactagttat 540
agggaaacag ctttgtctgc caggaagaat gagaaggaat atgacacacc agaagtcaca 600
ttatcatatt cagttgagaa agttggatgt gaagttccag caactattac atatataaaa 660
gatggacaga gatatgagga gctagatgat tctttatact taggaaaaga ggaatatcta 720
ggatctgttg acacccctga agatgcagaa gccactgtgg aagaggaggt ttatgatgac 780
ccagagcacg ttggatatga tggtgaagag gacttcgaga attcagaaac cacagagttc 840
tctggtgaag aaccaagtta tgagggatca gaaaccagcc tttcattgga ggaggaacag 900
gagaaaagta tagaaggctg gtctcgaact catgggctta agcgatcctc ccacgttggc 960
ctcccaaagt gctgggatta caggcgtgag ccaccctgcc tggcctgaaa attctgcctc 1020
aaacatctca aacatccatt tatattttgt acaagaaagt aaataaaatt tttcttttta 1080
acattaaaaa aaaaaaaaaa aaaaaaa                                     1107

<210> 85
<211> 510
<212> DNA
<213> Homo sapien

<220>
<221> CDS
<222> (15)...(305)

<400> 85
aggagagaaa agcc atg gcc gac aag gtc ctg aag gag aag aga aag ctg   50
               Met Ala Asp Lys Val Leu Lys Glu Lys Arg Lys Leu
                1               5                   10
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ttt atc cat tcc atg ggt gaa ggt aca ata aat ggc tta ctg gat gaa   98
Phe Ile His Ser Met Gly Glu Gly Thr Ile Asn Gly Leu Leu Asp Glu
         15                  20                  25

tta tta cag aca agg gtg ctg aac cag gaa gag atg gag aaa gta aaa  146
Leu Leu Gln Thr Arg Val Leu Asn Gln Glu Glu Met Glu Lys Val Lys
     30                  35                  40

cgt gaa aat gct aca gtt atg gat aag acc cga gct ttg att gac tcc  194
Arg Glu Asn Ala Thr Val Met Asp Lys Thr Arg Ala Leu Ile Asp Ser
 45                  50                  55                  60

gtt att ccg aaa ggg gca cag gca tgc caa att tgc atc aca tac att  242
Val Ile Pro Lys Gly Ala Gln Ala Cys Gln Ile Cys Ile Thr Tyr Ile
                 65                  70                  75

tgt gaa gaa gac agt tac ctg gca gag acg ctg gga ctc tca gca ggt  290
Cys Glu Glu Asp Ser Tyr Leu Ala Glu Thr Leu Gly Leu Ser Ala Gly
             80                  85                  90

ccg ata cct gga aat tagcttagct tagtacacaa gactcccaat tactattttc  345
Pro Ile Pro Gly Asn
         95

ttccttccca gctcttcagg cagtgcagga caacccagct atgcccacat gctcaagccc 405
agaaggcaga atcaagcttt gctttctaga agacgctcaa aggatatgga aacaaaagtt 465
gcagaggtgc catgttcaga atacaataat aaagtggagt aaaga                 510

<210> 86
<211> 97
<212> PRT
<213> Homo sapien

<400> 86
Met Ala Asp Lys Val Leu Lys Glu Lys Arg Lys Leu Phe Ile His Ser
 1               5                  10                  15
Met Gly Glu Gly Thr Ile Asn Gly Leu Leu Asp Glu Leu Leu Gln Thr
            20                  25                  30
Arg Val Leu Asn Gln Glu Glu Met Glu Lys Val Lys Arg Glu Asn Ala
        35                  40                  45
Thr Val Met Asp Lys Thr Arg Ala Leu Ile Asp Ser Val Ile Pro Lys
    50                  55                  60
Gly Ala Gln Ala Cys Gln Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp
65                  70                  75                  80
Ser Tyr Leu Ala Glu Thr Leu Gly Leu Ser Ala Gly Pro Ile Pro Gly
                85                  90                  95
Asn


<210> 87
<211> 97
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<212> PRT
<213> Homo sapien

<400> 87
Met Ala Asp Lys Val Leu Lys Glu Lys Arg Lys Leu Phe Ile Arg Ser
 1   5   10   15
Met Gly Glu Gly Thr Ile Asn Gly Leu Leu Asp Glu Leu Leu Gln Thr
            20   25   30
Arg Val Leu Asn Lys Glu Glu Met Glu Lys Val Lys Arg Glu Asn Ala
        35   40   45
Thr Val Met Asp Lys Thr Arg Ala Leu Ile Asp Ser Val Ile Pro Lys
    50   55   60
Gly Ala Gln Ala Cys Gln Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp
65   70   75   80
Ser Tyr Leu Ala Gly Thr Leu Gly Leu Ser Ala Asp Gln Thr Ser Gly
                85   90   95
Asn

<210> 88

<400> 88
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<210> 89
<211> 321
<212> DNA
<213> Homo sapien

<220>
<221> CDS
<222> (1)...(318)

<400> 89
atg atc ctc ctg aag aag aga cgg ctg ctt atc aat tca ttg ggt gaa   48
Met Ile Leu Leu Lys Lys Arg Arg Leu Leu Ile Asn Ser Leu Gly Glu
 1   5   10   15

ggt aca ata aat ggc tta ctg gat gaa tta ttg gag aca aat gtg ctg   96
Gly Thr Ile Asn Gly Leu Leu Asp Glu Leu Leu Glu Thr Asn Val Leu
            20   25   30

agc cag gaa gac aca gag ata gta aaa tgt gaa aat gtt aca gtt atc   144
Ser Gln Glu Asp Thr Glu Ile Val Lys Cys Glu Asn Val Thr Val Ile
        35   40   45

gat aag gcc cga gat ttg ctt gac tct gtt att cgg aaa ggg gca ggg   192
Asp Lys Ala Arg Asp Leu Leu Asp Ser Val Ile Arg Lys Gly Ala Gly
    50   55   60

gca tgt gaa att tgc atc aca tac att tgt gaa gaa gac agg tac ctg   240
Ala Cys Glu Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp Arg Tyr Leu

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 65                  70                  75                  80

gca ggg acg ctg gga ctc tca gca gga aat gac tac aga gct gga ggc   288
Ala Gly Thr Leu Gly Leu Ser Ala Gly Asn Asp Tyr Arg Ala Gly Gly
                85                  90                  95

att tgc tca ccg ccc aga gca caa gac ctc tga                       321
Ile Cys Ser Pro Pro Arg Ala Gln Asp Leu
            100                 105


<210> 90
<211> 106
<212> PRT
<213> Homo sapien

<400> 90
Met Ile Leu Leu Lys Lys Arg Arg Leu Leu Ile Asn Ser Leu Gly Glu
 1               5                  10                  15
Gly Thr Ile Asn Gly Leu Leu Asp Glu Leu Leu Glu Thr Asn Val Leu
            20                  25                  30
Ser Gln Glu Asp Thr Glu Ile Val Lys Cys Glu Asn Val Thr Val Ile
        35                  40                  45
Asp Lys Ala Arg Asp Leu Leu Asp Ser Val Ile Arg Lys Gly Ala Gly
    50                  55                  60
Ala Cys Glu Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp Arg Tyr Leu
65                  70                  75                  80
Ala Gly Thr Leu Gly Leu Ser Ala Gly Asn Asp Tyr Arg Ala Gly Gly
                85                  90                  95
Ile Cys Ser Pro Pro Arg Ala Gln Asp Leu
            100                 105


<210> 91
<211> 108
<212> PRT
<213> Homo sapien

<400> 91
Met Ala Asp Lys Val Leu Leu Glu Lys Arg Lys Leu Leu Ile Asn Ser
 1               5                  10                  15
Leu Gly Glu Gly Thr Ile Asn Gly Leu Leu Asp Glu Leu Leu Glu Thr
            20                  25                  30
Asn Val Leu Ser Gln Glu Asp Glu Ile Val Lys Arg Glu Asn Ala Thr
        35                  40                  45
Val Ile Asp Lys Ala Arg Ala Leu Leu Asp Ser Val Ile Arg Lys Gly
    50                  55                  60
Ala Gly Ala Cys Glu Ile Cys Ile Thr Tyr Ile Cys Glu Glu Asp Ser
65                  70                  75                  80
Tyr Leu Ala Gly Thr Leu Gly Leu Ser Ala Gly Asn Ala Val Gln Ala
                85                  90                  95
Gly Gly Ala Cys Ser Thr Ser Ser Gly Gln Asp Leu
            100                 105
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<210> 92

<400> 92
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<400> 93
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<210> 94

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<210> 96
<211> 3396
<212> DNA
<213> Homo sapien

<220>
<221> CDS
<222> (277)...(3348)

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acatctgctg gaagtcctct gggattcaag gtacagggaa tgaagagtag ttttacagaa 180
aaaagaggac aatattggga tcacctttga cctttccatt tggaaataat attttctatt 240
gtgttataga aaggtgggaa gctttcatcc agaaca atg aat ttc ata aag gac 294
Met Asn Phe Ile Lys Asp
1 5

aat agc cga gcc ctt att caa aga atg gga atg act gtt ata aag caa 342
Asn Ser Arg Ala Leu Ile Gln Arg Met Gly Met Thr Val Ile Lys Gln
10 15 20

atc aca gat gac cta ttt gta tgg aat gtt ctg aat cgc gaa gaa gta 390
Ile Thr Asp Asp Leu Phe Val Trp Asn Val Leu Asn Arg Glu Glu Val
25 30 35

aac atc att tgc tgc gag aag gtg gag cag gat gct gct aga ggg atc 438
Asn Ile Ile Cys Cys Glu Lys Val Glu Gln Asp Ala Ala Arg Gly Ile
40 45 50

att cac atg att ttg aaa aag ggt tca gag tcc tgt aac ctc ttt ctt 486

```
Ile His Met Ile Leu Lys Lys Gly Ser Glu Ser Cys Asn Leu Phe Leu
 55                  60                  65                  70

aaa tcc ctt aag gag tgg aac tat cct cta ttt cag gac ttg aat gga     534
Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu Phe Gln Asp Leu Asn Gly
                75                  80                  85

caa agt ctt ttt cat cag aca tca gaa gga gac ttg gac gat ttg gct     582
Gln Ser Leu Phe His Gln Thr Ser Glu Gly Asp Leu Asp Asp Leu Ala
            90                  95                 100

cag gat tta aag gac ttg tac cat acc cca tct ttt ctg aac ttt tat     630
Gln Asp Leu Lys Asp Leu Tyr His Thr Pro Ser Phe Leu Asn Phe Tyr
        105                 110                 115

ccc ctt ggt gaa gat att gac att att ttt aac ttg aaa agc acc ttc     678
Pro Leu Gly Glu Asp Ile Asp Ile Ile Phe Asn Leu Lys Ser Thr Phe
    120                 125                 130

aca gaa cct atc ctg tgg agg aag gac caa cac cat cac cgc gtg gag     726
Thr Glu Pro Ile Leu Trp Arg Lys Asp Gln His His His Arg Val Glu
135                 140                 145                 150

cag ctg acc ctg aat ggc ctc ctg cag gct ctt cag agc ccc tgc atc     774
Gln Leu Thr Leu Asn Gly Leu Leu Gln Ala Leu Gln Ser Pro Cys Ile
                155                 160                 165

att gaa ggg gaa tct ggc aaa ggc aag tcc act ctg ctg cag cgc att     822
Ile Glu Gly Glu Ser Gly Lys Gly Lys Ser Thr Leu Leu Gln Arg Ile
            170                 175                 180

gcc atg ctc tgg ggc tcc gga aag tgc aag gct ctg acc aag ttc aaa     870
Ala Met Leu Trp Gly Ser Gly Lys Cys Lys Ala Leu Thr Lys Phe Lys
        185                 190                 195

ttc gtc ttc ttc ctc cgt ctc agc agg gcc cag ggt gga ctt ttt gaa     918
Phe Val Phe Phe Leu Arg Leu Ser Arg Ala Gln Gly Gly Leu Phe Glu
    200                 205                 210

acc ctc tgt gat caa ctc ctg gat ata cct ggc aca atc agg aag cag     966
Thr Leu Cys Asp Gln Leu Leu Asp Ile Pro Gly Thr Ile Arg Lys Gln
215                 220                 225                 230

aca ttc atg gcc atg ctg ctg aag ctg cgg cag agg gtt ctt ttc ctt    1014
Thr Phe Met Ala Met Leu Leu Lys Leu Arg Gln Arg Val Leu Phe Leu
                235                 240                 245

ctt gat ggc tac aat gaa ttc aag ccc cag aac tgc cca gaa atc gaa    1062
Leu Asp Gly Tyr Asn Glu Phe Lys Pro Gln Asn Cys Pro Glu Ile Glu
            250                 255                 260

gcc ctg ata aag gaa aac cac cgc ttc aag aac atg gtc atc gtc acc    1110
Ala Leu Ile Lys Glu Asn His Arg Phe Lys Asn Met Val Ile Val Thr
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        265                 270                 275

act acc act gag tgc ctg agg cac ata cgg cag ttt ggt gcc ctg act   1158
Thr Thr Thr Glu Cys Leu Arg His Ile Arg Gln Phe Gly Ala Leu Thr
    280                 285                 290

gct gag gtg ggg gat atg aca gaa gac agc gcc cag gct ctc atc cga   1206
Ala Glu Val Gly Asp Met Thr Glu Asp Ser Ala Gln Ala Leu Ile Arg
295                 300                 305                 310

gaa gtg ctg atc aag gag ctt gct gaa ggc ttg ttg ctc caa att cag   1254
Glu Val Leu Ile Lys Glu Leu Ala Glu Gly Leu Leu Leu Gln Ile Gln
                315                 320                 325

aaa tcc agg tgc ttg agg aat ctc atg aag acc cct ctc ttt gtg gtc   1302
Lys Ser Arg Cys Leu Arg Asn Leu Met Lys Thr Pro Leu Phe Val Val
            330                 335                 340

atc act tgt gca atc cag atg ggt gaa agt gag ttc cac tct cac aca   1350
Ile Thr Cys Ala Ile Gln Met Gly Glu Ser Glu Phe His Ser His Thr
        345                 350                 355

caa aca acg ctg ttc cat acc ttc tat gat ctg ttg ata cag aaa aac   1398
Gln Thr Thr Leu Phe His Thr Phe Tyr Asp Leu Leu Ile Gln Lys Asn
    360                 365                 370

aaa cac aaa cat aaa ggt gtg gct gca agt gac ttc att cgg agc ctg   1446
Lys His Lys His Lys Gly Val Ala Ala Ser Asp Phe Ile Arg Ser Leu
375                 380                 385                 390

gac cac cgt gga gac cta gct ctg gag ggt gtg ttc tcc cac aag ttt   1494
Asp His Arg Gly Asp Leu Ala Leu Glu Gly Val Phe Ser His Lys Phe
                395                 400                 405

gat ttc gaa ctg cag gat gtg tcc agc gtg aat gag gat gtc ctg ctg   1542
Asp Phe Glu Leu Gln Asp Val Ser Ser Val Asn Glu Asp Val Leu Leu
            410                 415                 420

aca act ggg ctc ctc tgt aaa tat aca gct caa agg ttc aag cca aag   1590
Thr Thr Gly Leu Leu Cys Lys Tyr Thr Ala Gln Arg Phe Lys Pro Lys
        425                 430                 435

tat aaa ttc ttt cac aag tca ttc cag gag tac aca gca gga cga aga   1638
Tyr Lys Phe Phe His Lys Ser Phe Gln Glu Tyr Thr Ala Gly Arg Arg
    440                 445                 450

ctc agc agt tta ttg acg tct cat gag cca gag gag gtg acc aag ggg   1686
Leu Ser Ser Leu Leu Thr Ser His Glu Pro Glu Glu Val Thr Lys Gly
455                 460                 465                 470

aat ggt tac ttg cag aaa atg gtt tcc att tcg gac att aca tcc act   1734
Asn Gly Tyr Leu Gln Lys Met Val Ser Ile Ser Asp Ile Thr Ser Thr
                475                 480                 485
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tat agc agc ctg ctc cgg tac acc tgt ggg tca tct gtg gaa gcc acc   1782
Tyr Ser Ser Leu Leu Arg Tyr Thr Cys Gly Ser Ser Val Glu Ala Thr
            490                 495                 500

agg gct gtt atg aag cac ctc gca gca gtg tat caa cac ggc tgc ctt   1830
Arg Ala Val Met Lys His Leu Ala Ala Val Tyr Gln His Gly Cys Leu
        505                 510                 515

ctc gga ctt tcc atc gcc aag agg cct ctc tgg aga cag gaa tct ttg   1878
Leu Gly Leu Ser Ile Ala Lys Arg Pro Leu Trp Arg Gln Glu Ser Leu
    520                 525                 530

caa agt gtg aaa aac acc act gag caa gaa att ctg aaa gcc ata aac   1926
Gln Ser Val Lys Asn Thr Thr Glu Gln Glu Ile Leu Lys Ala Ile Asn
535                 540                 545                 550

atc aat tcc ttt gta gag tgt ggc atc cat tta tat caa gag agt aca   1974
Ile Asn Ser Phe Val Glu Cys Gly Ile His Leu Tyr Gln Glu Ser Thr
                555                 560                 565

tcc aaa tca gcc ctg agc caa gaa ttt gaa gct ttc ttt caa ggt aaa   2022
Ser Lys Ser Ala Leu Ser Gln Glu Phe Glu Ala Phe Phe Gln Gly Lys
            570                 575                 580

agc tta tat atc aac tca ggg aac atc ccc gat tac tta ttt gac ttc   2070
Ser Leu Tyr Ile Asn Ser Gly Asn Ile Pro Asp Tyr Leu Phe Asp Phe
        585                 590                 595

ttt gaa cat ttg ccc aat tgt gca agt gcc ctg gac ttc att aaa ctg   2118
Phe Glu His Leu Pro Asn Cys Ala Ser Ala Leu Asp Phe Ile Lys Leu
    600                 605                 610

gac ttt tat ggg gga gct atg gct tca tgg gaa aag gct gca gaa gac   2166
Asp Phe Tyr Gly Gly Ala Met Ala Ser Trp Glu Lys Ala Ala Glu Asp
615                 620                 625                 630

aca ggt gga atc cac atg gaa gag gcc cca gaa acc tac att ccc agc   2214
Thr Gly Gly Ile His Met Glu Glu Ala Pro Glu Thr Tyr Ile Pro Ser
                635                 640                 645

agg gct gta tct ttg ttc ttc aac tgg aag cag gaa ttc agg act ctg   2262
Arg Ala Val Ser Leu Phe Phe Asn Trp Lys Gln Glu Phe Arg Thr Leu
            650                 655                 660

gag gtc aca ctc cgg gat ttc agc aag ttg aat aag caa gat atc aga   2310
Glu Val Thr Leu Arg Asp Phe Ser Lys Leu Asn Lys Gln Asp Ile Arg
        665                 670                 675

tat ctg ggg aaa ata ttc agc tct gcc aca agc ctc agg ctg caa ata   2358
Tyr Leu Gly Lys Ile Phe Ser Ser Ala Thr Ser Leu Arg Leu Gln Ile
    680                 685                 690
```

```
aag aga tgt gct ggt gtg gct gga agc ctc agt ttg gtc ctc agc acc    2406
Lys Arg Cys Ala Gly Val Ala Gly Ser Leu Ser Leu Val Leu Ser Thr
695                 700                 705                 710

tgt aag aac att tat tct ctc atg gtg gaa gcc agt ccc ctc acc ata    2454
Cys Lys Asn Ile Tyr Ser Leu Met Val Glu Ala Ser Pro Leu Thr Ile
                715                 720                 725

gaa gat gag agg cac atc aca tct gta aca aac ctg aaa acc ttg agt    2502
Glu Asp Glu Arg His Ile Thr Ser Val Thr Asn Leu Lys Thr Leu Ser
            730                 735                 740

att cat gac cta cag aat caa cgg ctg ccg ggt ggt ctg act gac agc    2550
Ile His Asp Leu Gln Asn Gln Arg Leu Pro Gly Gly Leu Thr Asp Ser
        745                 750                 755

ttg ggt aac ttg aag aac ctt aca aag ctc ata atg gat aac ata aag    2598
Leu Gly Asn Leu Lys Asn Leu Thr Lys Leu Ile Met Asp Asn Ile Lys
    760                 765                 770

atg aat gaa gaa gat gct ata aaa cta gct gaa ggc ctg aaa aac ctg    2646
Met Asn Glu Glu Asp Ala Ile Lys Leu Ala Glu Gly Leu Lys Asn Leu
775                 780                 785                 790

aag aag atg tgt tta ttt cat ttg acc cac ttg tct gac att gga gag    2694
Lys Lys Met Cys Leu Phe His Leu Thr His Leu Ser Asp Ile Gly Glu
                795                 800                 805

gga atg gat tac ata gtc aag tct ctg tca agt gaa ccc tgt gac ctt    2742
Gly Met Asp Tyr Ile Val Lys Ser Leu Ser Ser Glu Pro Cys Asp Leu
            810                 815                 820

gaa gaa att caa tta gtc tcc tgc tgc ttg tct gca aat gca gtg aaa    2790
Glu Glu Ile Gln Leu Val Ser Cys Cys Leu Ser Ala Asn Ala Val Lys
        825                 830                 835

atc cta gct cag aat ctt cac aat ttg gtc aaa ctg agc att ctt gat    2838
Ile Leu Ala Gln Asn Leu His Asn Leu Val Lys Leu Ser Ile Leu Asp
    840                 845                 850

tta tca gaa aat tac ctg gaa aaa gat gga aat gaa gct ctt cat gaa    2886
Leu Ser Glu Asn Tyr Leu Glu Lys Asp Gly Asn Glu Ala Leu His Glu
855                 860                 865                 870

ctg atc gac agg atg aac gtg cta gaa cag ctc acc gca ctg atg ctg    2934
Leu Ile Asp Arg Met Asn Val Leu Glu Gln Leu Thr Ala Leu Met Leu
                875                 880                 885

ccc tgg ggc tgt gac gtg caa ggc agc ctg agc agc ctg ttg aaa cat    2982
Pro Trp Gly Cys Asp Val Gln Gly Ser Leu Ser Ser Leu Leu Lys His
            890                 895                 900

ttg gag gag gtc cca caa ctc gtc aag ctt ggg ttg aaa aac tgg aga    3030
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```
Leu Glu Glu Val Pro Gln Leu Val Lys Leu Gly Leu Lys Asn Trp Arg
        905                 910                 915

ctc aca gat aca gag att aga att tta ggt gca ttt ttt gga aag aac   3078
Leu Thr Asp Thr Glu Ile Arg Ile Leu Gly Ala Phe Phe Gly Lys Asn
    920                 925                 930

cct ctg aaa aac ttc cag cag ttg aat ttg gcg gga aat cgt gtg agc   3126
Pro Leu Lys Asn Phe Gln Gln Leu Asn Leu Ala Gly Asn Arg Val Ser
935                 940                 945                 950

agt gat gga tgg ctt gcc ttc atg ggt gta ttt gag aat ctt aag caa   3174
Ser Asp Gly Trp Leu Ala Phe Met Gly Val Phe Glu Asn Leu Lys Gln
                955                 960                 965

tta gtg ttt ttt gac ttt agt act aaa gaa ttt cta cct gat cca gca   3222
Leu Val Phe Phe Asp Phe Ser Thr Lys Glu Phe Leu Pro Asp Pro Ala
            970                 975                 980

tta gtc aga aaa ctt agc caa gtg tta tcc aag tta act ttt ctg caa   3270
Leu Val Arg Lys Leu Ser Gln Val Leu Ser Lys Leu Thr Phe Leu Gln
         985                 990                 995

gaa gct agg ctt gtt ggg tgg caa ttt gat gat gat gat ctc agt gtt   3318
Glu Ala Arg Leu Val Gly Trp Gln Phe Asp Asp Asp Asp Leu Ser Val
    1000                1005                1010

att aca ggt gct ttt aaa cta gta act gct taaataaagt gtactcgaag     3368
Ile Thr Gly Ala Phe Lys Leu Val Thr Ala
1015                1020

ccaaaaaaaa aaaaaaaaaa aaaaaaaa                                    3396

<210> 97
<211> 1024
<212> PRT
<213> Homo sapien

<400> 97
Met Asn Phe Ile Lys Asp Asn Ser Arg Ala Leu Ile Gln Arg Met Gly
 1               5                  10                  15
Met Thr Val Ile Lys Gln Ile Thr Asp Asp Leu Phe Val Trp Asn Val
            20                  25                  30
Leu Asn Arg Glu Glu Val Asn Ile Ile Cys Cys Glu Lys Val Glu Gln
        35                  40                  45
Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu
    50                  55                  60
Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu
65                  70                  75                  80
Phe Gln Asp Leu Asn Gly Gln Ser Leu Phe His Gln Thr Ser Glu Gly
                85                  90                  95
Asp Leu Asp Asp Leu Ala Gln Asp Leu Lys Asp Leu Tyr His Thr Pro
            100                 105                 110
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Ser Phe Leu Asn Phe Tyr Pro Leu Gly Glu Asp Ile Asp Ile Ile Phe
115 120 125
Asn Leu Lys Ser Thr Phe Thr Glu Pro Ile Leu Trp Arg Lys Asp Gln
130 135 140
His His His Arg Val Glu Gln Leu Thr Leu Asn Gly Leu Leu Gln Ala
145 150 155 160
Leu Gln Ser Pro Cys Ile Ile Glu Gly Glu Ser Gly Lys Gly Lys Ser
165 170 175
Thr Leu Leu Gln Arg Ile Ala Met Leu Trp Gly Ser Gly Lys Cys Lys
180 185 190
Ala Leu Thr Lys Phe Lys Phe Val Phe Phe Leu Arg Leu Ser Arg Ala
195 200 205
Gln Gly Gly Leu Phe Glu Thr Leu Cys Asp Gln Leu Leu Asp Ile Pro
210 215 220
Gly Thr Ile Arg Lys Gln Thr Phe Met Ala Met Leu Leu Lys Leu Arg
225 230 235 240
Gln Arg Val Leu Phe Leu Leu Asp Gly Tyr Asn Glu Phe Lys Pro Gln
245 250 255
Asn Cys Pro Glu Ile Glu Ala Leu Ile Lys Glu Asn His Arg Phe Lys
260 265 270
Asn Met Val Ile Val Thr Thr Thr Thr Glu Cys Leu Arg His Ile Arg
275 280 285
Gln Phe Gly Ala Leu Thr Ala Glu Val Gly Asp Met Thr Glu Asp Ser
290 295 300
Ala Gln Ala Leu Ile Arg Glu Val Leu Ile Lys Glu Leu Ala Glu Gly
305 310 315 320
Leu Leu Leu Gln Ile Gln Lys Ser Arg Cys Leu Arg Asn Leu Met Lys
325 330 335
Thr Pro Leu Phe Val Val Ile Thr Cys Ala Ile Gln Met Gly Glu Ser
340 345 350
Glu Phe His Ser His Thr Gln Thr Thr Leu Phe His Thr Phe Tyr Asp
355 360 365
Leu Leu Ile Gln Lys Asn Lys His Lys His Lys Gly Val Ala Ala Ser
370 375 380
Asp Phe Ile Arg Ser Leu Asp His Arg Gly Asp Leu Ala Leu Glu Gly
385 390 395 400
Val Phe Ser His Lys Phe Asp Phe Glu Leu Gln Asp Val Ser Ser Val
405 410 415
Asn Glu Asp Val Leu Leu Thr Thr Gly Leu Leu Cys Lys Tyr Thr Ala
420 425 430
Gln Arg Phe Lys Pro Lys Tyr Lys Phe Phe His Lys Ser Phe Gln Glu
435 440 445
Tyr Thr Ala Gly Arg Arg Leu Ser Ser Leu Leu Thr Ser His Glu Pro
450 455 460
Glu Glu Val Thr Lys Gly Asn Gly Tyr Leu Gln Lys Met Val Ser Ile
465 470 475 480
Ser Asp Ile Thr Ser Thr Tyr Ser Ser Leu Leu Arg Tyr Thr Cys Gly
485 490 495
Ser Ser Val Glu Ala Thr Arg Ala Val Met Lys His Leu Ala Ala Val
500 505 510
Tyr Gln His Gly Cys Leu Leu Gly Leu Ser Ile Ala Lys Arg Pro Leu
515 520 525
Trp Arg Gln Glu Ser Leu Gln Ser Val Lys Asn Thr Thr Glu Gln Glu

530 535 540
Ile Leu Lys Ala Ile Asn Ile Asn Ser Phe Val Glu Cys Gly Ile His
545 550 555 560
Leu Tyr Gln Glu Ser Thr Ser Lys Ser Ala Leu Ser Gln Glu Phe Glu
565 570 575
Ala Phe Phe Gln Gly Lys Ser Leu Tyr Ile Asn Ser Gly Asn Ile Pro
580 585 590
Asp Tyr Leu Phe Asp Phe Phe Glu His Leu Pro Asn Cys Ala Ser Ala
595 600 605
Leu Asp Phe Ile Lys Leu Asp Phe Tyr Gly Gly Ala Met Ala Ser Trp
610 615 620
Glu Lys Ala Ala Glu Asp Thr Gly Gly Ile His Met Glu Glu Ala Pro
625 630 635 640
Glu Thr Tyr Ile Pro Ser Arg Ala Val Ser Leu Phe Phe Asn Trp Lys
645 650 655
Gln Glu Phe Arg Thr Leu Glu Val Thr Leu Arg Asp Phe Ser Lys Leu
660 665 670
Asn Lys Gln Asp Ile Arg Tyr Leu Gly Lys Ile Phe Ser Ser Ala Thr
675 680 685
Ser Leu Arg Leu Gln Ile Lys Arg Cys Ala Gly Val Ala Gly Ser Leu
690 695 700
Ser Leu Val Leu Ser Thr Cys Lys Asn Ile Tyr Ser Leu Met Val Glu
705 710 715 720
Ala Ser Pro Leu Thr Ile Glu Asp Glu Arg His Ile Thr Ser Val Thr
725 730 735
Asn Leu Lys Thr Leu Ser Ile His Asp Leu Gln Asn Gln Arg Leu Pro
740 745 750
Gly Gly Leu Thr Asp Ser Leu Gly Asn Leu Lys Asn Leu Thr Lys Leu
755 760 765
Ile Met Asp Asn Ile Lys Met Asn Glu Glu Asp Ala Ile Lys Leu Ala
770 775 780
Glu Gly Leu Lys Asn Leu Lys Lys Met Cys Leu Phe His Leu Thr His
785 790 795 800
Leu Ser Asp Ile Gly Glu Gly Met Asp Tyr Ile Val Lys Ser Leu Ser
805 810 815
Ser Glu Pro Cys Asp Leu Glu Glu Ile Gln Leu Val Ser Cys Cys Leu
820 825 830
Ser Ala Asn Ala Val Lys Ile Leu Ala Gln Asn Leu His Asn Leu Val
835 840 845
Lys Leu Ser Ile Leu Asp Leu Ser Glu Asn Tyr Leu Glu Lys Asp Gly
850 855 860
Asn Glu Ala Leu His Glu Leu Ile Asp Arg Met Asn Val Leu Glu Gln
865 870 875 880
Leu Thr Ala Leu Met Leu Pro Trp Gly Cys Asp Val Gln Gly Ser Leu
885 890 895
Ser Ser Leu Leu Lys His Leu Glu Glu Val Pro Gln Leu Val Lys Leu
900 905 910
Gly Leu Lys Asn Trp Arg Leu Thr Asp Thr Glu Ile Arg Ile Leu Gly
915 920 925
Ala Phe Phe Gly Lys Asn Pro Leu Lys Asn Phe Gln Gln Leu Asn Leu
930 935 940
Ala Gly Asn Arg Val Ser Ser Asp Gly Trp Leu Ala Phe Met Gly Val
945 950 955 960

```
Phe Glu Asn Leu Lys Gln Leu Val Phe Phe Asp Phe Ser Thr Lys Glu
                965                 970                 975
Phe Leu Pro Asp Pro Ala Leu Val Arg Lys Leu Ser Gln Val Leu Ser
            980                 985                 990
Lys Leu Thr Phe Leu Gln Glu Ala Arg Leu Val Gly Trp Gln Phe Asp
        995                 1000                1005
Asp Asp Asp Leu Ser Val Ile Thr Gly Ala Phe Lys Leu Val Thr Ala
    1010                1015                1020
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<210> 98
<211> 1395
<212> DNA
<213> Homo sapien

<220>
<221> CDS
<222> (277)...(1353)

<400> 98

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aaaactggtg atctgtttgc cctgtgtgac cttgcccaga accctgctga ctgagagaac 120
acatctgctg gaagtcctct gggattcaag gtacagggaa tgaagagtag ttttacagaa 180
aaaagaggac aatattggga tcacctttga cctttccatt tggaaataat attttctatt 240
gtgttataga aaggtgggaa gctttcatcc agaaca atg aat ttc ata aag gac   294
                                       Met Asn Phe Ile Lys Asp
                                        1               5

aat agc cga gcc ctt att caa aga atg gga atg act gtt ata aag caa   342
Asn Ser Arg Ala Leu Ile Gln Arg Met Gly Met Thr Val Ile Lys Gln
            10                  15                  20

atc aca gat gac cta ttt gta tgg aat gtt ctg aat cgc gaa gaa gta   390
Ile Thr Asp Asp Leu Phe Val Trp Asn Val Leu Asn Arg Glu Glu Val
        25                  30                  35

aac atc att tgc tgc gag aag gtg gag cag gat gct gct aga ggg atc   438
Asn Ile Ile Cys Cys Glu Lys Val Glu Gln Asp Ala Ala Arg Gly Ile
    40                  45                  50

att cac atg att ttg aaa aag ggt tca gag tcc tgt aac ctc ttt ctt   486
Ile His Met Ile Leu Lys Lys Gly Ser Glu Ser Cys Asn Leu Phe Leu
55                  60                  65                  70

aaa tcc ctt aag gag tgg aac tat cct cta ttt cag gac ttg aat gga   534
Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu Phe Gln Asp Leu Asn Gly
                75                  80                  85

caa agt ggt ctg act gac agc ttg ggt aac ttg aag aac ctt aca aag   582
Gln Ser Gly Leu Thr Asp Ser Leu Gly Asn Leu Lys Asn Leu Thr Lys
            90                  95                  100

ctc ata atg gat aac ata aag atg aat gaa gaa gat gct ata aaa cta   630
```

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Leu Ile Met Asp Asn Ile Lys Met Asn Glu Glu Asp Ala Ile Lys Leu
        105                 110                 115

gct gaa ggc ctg aaa aac ctg aag aag atg tgt tta ttt cat ttg acc   678
Ala Glu Gly Leu Lys Asn Leu Lys Lys Met Cys Leu Phe His Leu Thr
    120                 125                 130

cac ttg tct gac att gga gag gga atg gat tac ata gtc aag tct ctg   726
His Leu Ser Asp Ile Gly Glu Gly Met Asp Tyr Ile Val Lys Ser Leu
135                 140                 145                 150

tca agt gaa ccc tgt gac ctt gaa gaa att caa tta gtc tcc tgc tgc   774
Ser Ser Glu Pro Cys Asp Leu Glu Glu Ile Gln Leu Val Ser Cys Cys
                155                 160                 165

ttg tct gca aat gca gtg aaa atc cta gct cag aat ctt cac aat ttg   822
Leu Ser Ala Asn Ala Val Lys Ile Leu Ala Gln Asn Leu His Asn Leu
            170                 175                 180

gtc aaa ctg agc att ctt gat tta tca gaa aat tac ctg gaa aaa gat   870
Val Lys Leu Ser Ile Leu Asp Leu Ser Glu Asn Tyr Leu Glu Lys Asp
        185                 190                 195

gga aat gaa gct ctt cat gaa ctg atc gac agg atg aac gtg cta gaa   918
Gly Asn Glu Ala Leu His Glu Leu Ile Asp Arg Met Asn Val Leu Glu
    200                 205                 210

cag ctc acc gca ctg atg ctg ccc tgg ggc tgt gac gtg caa ggc agc   966
Gln Leu Thr Ala Leu Met Leu Pro Trp Gly Cys Asp Val Gln Gly Ser
215                 220                 225                 230

ctg agc agc ctg ttg aaa cat ttg gag gag gtc cca caa ctc gtc aag   1014
Leu Ser Ser Leu Leu Lys His Leu Glu Glu Val Pro Gln Leu Val Lys
                235                 240                 245

ctt ggg ttg aaa aac tgg aga ctc aca gat aca gag att aga att tta   1062
Leu Gly Leu Lys Asn Trp Arg Leu Thr Asp Thr Glu Ile Arg Ile Leu
            250                 255                 260

ggt gca ttt ttt gga aag aac cct ctg aaa aac ttc cag cag ttg aat   1110
Gly Ala Phe Phe Gly Lys Asn Pro Leu Lys Asn Phe Gln Gln Leu Asn
        265                 270                 275

ttg gcg gga aat cgt gtg agc agt gat gga tgg ctt gcc ttc atg ggt   1158
Leu Ala Gly Asn Arg Val Ser Ser Asp Gly Trp Leu Ala Phe Met Gly
    280                 285                 290

gta ttt gag aat ctt aag caa tta gtg ttt ttt gac ttt agt act aaa   1206
Val Phe Glu Asn Leu Lys Gln Leu Val Phe Phe Asp Phe Ser Thr Lys
295                 300                 305                 310

gaa ttt cta cct gat cca gca tta gtc aga aaa ctt agc caa gtg tta   1254
Glu Phe Leu Pro Asp Pro Ala Leu Val Arg Lys Leu Ser Gln Val Leu
```

```
                315                 320                 325

tcc aag tta act ttt ctg caa gaa gct agg ctt gtt ggg tgg caa ttt   1302
Ser Lys Leu Thr Phe Leu Gln Glu Ala Arg Leu Val Gly Trp Gln Phe
            330                 335                 340

gat gat gat gat ctc agt gtt att aca ggt gct ttt aaa cta gta act   1350
Asp Asp Asp Asp Leu Ser Val Ile Thr Gly Ala Phe Lys Leu Val Thr
        345                 350                 355

gct taaataaagt gtactcgaag caaaaaaaaa aaaaaaaaaa aa                1395
Ala
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<210> 99
<211> 359
<212> PRT
<213> Homo sapien

<400> 99

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Met Asn Phe Ile Lys Asp Asn Ser Arg Ala Leu Ile Gln Arg Met Gly
 1               5                  10                  15
Met Thr Val Ile Lys Gln Ile Thr Asp Asp Leu Phe Val Trp Asn Val
            20                  25                  30
Leu Asn Arg Glu Glu Val Asn Ile Ile Cys Cys Glu Lys Val Glu Gln
        35                  40                  45
Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu
    50                  55                  60
Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu
65                  70                  75                  80
Phe Gln Asp Leu Asn Gly Gln Ser Gly Leu Thr Asp Ser Leu Gly Asn
                85                  90                  95
Leu Lys Asn Leu Thr Lys Leu Ile Met Asp Asn Ile Lys Met Asn Glu
            100                 105                 110
Glu Asp Ala Ile Lys Leu Ala Glu Gly Leu Lys Asn Leu Lys Lys Met
        115                 120                 125
Cys Leu Phe His Leu Thr His Leu Ser Asp Ile Gly Glu Gly Met Asp
    130                 135                 140
Tyr Ile Val Lys Ser Leu Ser Ser Glu Pro Cys Asp Leu Glu Glu Ile
145                 150                 155                 160
Gln Leu Val Ser Cys Cys Leu Ser Ala Asn Ala Val Lys Ile Leu Ala
                165                 170                 175
Gln Asn Leu His Asn Leu Val Lys Leu Ser Ile Leu Asp Leu Ser Glu
            180                 185                 190
Asn Tyr Leu Glu Lys Asp Gly Asn Glu Ala Leu His Glu Leu Ile Asp
        195                 200                 205
Arg Met Asn Val Leu Glu Gln Leu Thr Ala Leu Met Leu Pro Trp Gly
    210                 215                 220
Cys Asp Val Gln Gly Ser Leu Ser Ser Leu Leu Lys His Leu Glu Glu
225                 230                 235                 240
Val Pro Gln Leu Val Lys Leu Gly Leu Lys Asn Trp Arg Leu Thr Asp
                245                 250                 255
```

Thr Glu Ile Arg Ile Leu Gly Ala Phe Phe Gly Lys Asn Pro Leu Lys
260 265 270
Asn Phe Gln Gln Leu Asn Leu Ala Gly Asn Arg Val Ser Ser Asp Gly
275 280 285
Trp Leu Ala Phe Met Gly Val Phe Glu Asn Leu Lys Gln Leu Val Phe
290 295 300
Phe Asp Phe Ser Thr Lys Glu Phe Leu Pro Asp Pro Ala Leu Val Arg
305 310 315 320
Lys Leu Ser Gln Val Leu Ser Lys Leu Thr Phe Leu Gln Glu Ala Arg
325 330 335
Leu Val Gly Trp Gln Phe Asp Asp Asp Asp Leu Ser Val Ile Thr Gly
340 345 350
Ala Phe Lys Leu Val Thr Ala
355

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<211> 578
<212> DNA
<213> Homo sapien

<220>
<221> CDS
<222> (277)...(552)

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aaaactggtg atctgtttgc cctgtgtgac cttgcccaga accctgctga ctgagagaac 120
acatctgctg gaagtcctct gggattcaag gtacagggaa tgaagagtag ttttacagaa 180
aaaagaggac aatattggga tcacctttga cctttccatt tggaaataat attttctatt 240
gtgttataga aaggtgggaa gctttcatcc agaaca atg aat ttc ata aag gac 294
Met Asn Phe Ile Lys Asp
1 5

aat agc cga gcc ctt att caa aga atg gga atg act gtt ata aag caa 342
Asn Ser Arg Ala Leu Ile Gln Arg Met Gly Met Thr Val Ile Lys Gln
10 15 20

atc aca gat gac cta ttt gta tgg aat gtt ctg aat cgc gaa gaa gta 390
Ile Thr Asp Asp Leu Phe Val Trp Asn Val Leu Asn Arg Glu Glu Val
25 30 35

aac atc att tgc tgc gag aag gtg gag cag gat gct gct aga ggg atc 438
Asn Ile Ile Cys Cys Glu Lys Val Glu Gln Asp Ala Ala Arg Gly Ile
40 45 50

att cac atg att ttg aaa aag ggt tca gag tcc tgt aac ctc ttt ctt 486
Ile His Met Ile Leu Lys Lys Gly Ser Glu Ser Cys Asn Leu Phe Leu
55 60 65 70

aaa tcc ctt aag gag tgg aac tat cct cta ttt cag gac ttg aat gga 534
Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu Phe Gln Asp Leu Asn Gly
75 80 85

caa agt ctt tta aca gct tagaaagtac agtagacata ctgggg 578
Gln Ser Leu Leu Thr Ala
90

<210> 101
<211> 92
<212> PRT
<213> Homo sapien

<400> 101
Met Asn Phe Ile Lys Asp Asn Ser Arg Ala Leu Ile Gln Arg Met Gly
1 5 10 15
Met Thr Val Ile Lys Gln Ile Thr Asp Asp Leu Phe Val Trp Asn Val
20 25 30
Leu Asn Arg Glu Glu Val Asn Ile Ile Cys Cys Glu Lys Val Glu Gln
35 40 45
Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu
50 55 60
Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu
65 70 75 80
Phe Gln Asp Leu Asn Gly Gln Ser Leu Leu Thr Ala
85 90

<210> 102
<211> 768
<212> DNA
<213> Homo sapien

<220>
<221> CDS
<222> (277)...(744)

<400> 102
cgcccgggca ggtgtttata ctccggaggg tgtccccgtg cgtcatcggt ggagtggacc 60
aaaactggtg atctgtttgc cctgtgtgac cttgcccaga accctgctga ctgagagaac 120
acatctgctg gaagtcctct gggattcaag gtacagggaa tgaagagtag ttttacagaa 180
aaaagaggac aatattggga tcacctttga cctttccatt tggaaataat attttctatt 240
gtgttataga aaggtgggaa gctttcatcc agaaca atg aat ttc ata aag gac 294
Met Asn Phe Ile Lys Asp
1 5

aat agc cga gcc ctt att caa aga atg gga atg act gtt ata aag caa 342
Asn Ser Arg Ala Leu Ile Gln Arg Met Gly Met Thr Val Ile Lys Gln
10 15 20

atc aca gat gac cta ttt gta tgg aat gtt ctg aat cgc gaa gaa gta 390
Ile Thr Asp Asp Leu Phe Val Trp Asn Val Leu Asn Arg Glu Glu Val
25 30 35

aac atc att tgc tgc gag aag gtg gag cag gat gct gct aga ggg atc 438

```
Asn Ile Ile Cys Cys Glu Lys Val Glu Gln Asp Ala Ala Arg Gly Ile
     40                  45                  50

att cac atg att ttg aaa aag ggt tca gag tcc tgt aac ctc ttt ctt   486
Ile His Met Ile Leu Lys Lys Gly Ser Glu Ser Cys Asn Leu Phe Leu
 55                  60                  65                  70

aaa tcc ctt aag gag tgg aac tat cct cta ttt cag gac ttg aat gga   534
Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu Phe Gln Asp Leu Asn Gly
                 75                  80                  85

caa agt ctt ttt cat cag aca tca gaa gga gac ttg gac gat ttg gct   582
Gln Ser Leu Phe His Gln Thr Ser Glu Gly Asp Leu Asp Asp Leu Ala
             90                  95                 100

cag gat tta aag gac ttg tac cat acc cca tct ttt ctg aac ttt tat   630
Gln Asp Leu Lys Asp Leu Tyr His Thr Pro Ser Phe Leu Asn Phe Tyr
        105                 110                 115

ccc ctt ggt gaa gat att gac att att ttt aac ttg aaa agc acc ttc   678
Pro Leu Gly Glu Asp Ile Asp Ile Ile Phe Asn Leu Lys Ser Thr Phe
    120                 125                 130

aca gaa cct gtc ctg tgg agg aag gac caa cac cat cac cgc gtg gag   726
Thr Glu Pro Val Leu Trp Arg Lys Asp Gln His His His Arg Val Glu
135                 140                 145                 150

cag ctg acc cta gtt tta tagcatcttc tacctgcccg ggcg               768
Gln Leu Thr Leu Val Leu
                155
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<210> 103
<211> 156
<212> PRT
<213> Homo sapien

<400> 103

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Met Asn Phe Ile Lys Asp Asn Ser Arg Ala Leu Ile Gln Arg Met Gly
 1               5                  10                  15
Met Thr Val Ile Lys Gln Ile Thr Asp Asp Leu Phe Val Trp Asn Val
            20                  25                  30
Leu Asn Arg Glu Glu Val Asn Ile Ile Cys Cys Glu Lys Val Glu Gln
        35                  40                  45
Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu
    50                  55                  60
Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu
65                  70                  75                  80
Phe Gln Asp Leu Asn Gly Gln Ser Leu Phe His Gln Thr Ser Glu Gly
                85                  90                  95
Asp Leu Asp Asp Leu Ala Gln Asp Leu Lys Asp Leu Tyr His Thr Pro
            100                 105                 110
Ser Phe Leu Asn Phe Tyr Pro Leu Gly Glu Asp Ile Asp Ile Ile Phe
```

```
        115                 120                 125
Asn Leu Lys Ser Thr Phe Thr Glu Pro Val Leu Trp Arg Lys Asp Gln
    130                 135                 140
His His His Arg Val Glu Gln Leu Thr Leu Val Leu
145                 150                 155


<210> 104
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 104
aagaagagac ggctgcttat caat                                          24

<210> 105
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 105
ccacagcagg cctcgaagat gatc                                          24

<210> 106
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 106
atgatcctcc tgaagaagag                                               20

<210> 107
<211> 1009
<212> PRT
<213> Homo sapien

<400> 107
Cys Glu Met Cys Ser Gln Glu Ala Phe Gln Ala Gln Arg Ser Gln Leu
 1               5                  10                  15
Val Glu Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu
            20                  25                  30
Asp Trp Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly
        35                  40                  45
Phe His Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu
```

50 55 60
Asp Thr Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu Ile Ala
65 70 75 80
Ala Ala Gln Glu Ala Gln Ala Asp Ser Gln Ser Pro Lys Leu His Gly
85 90 95
Cys Trp Asp Pro His Ser Leu His Pro Ala Arg Asp Leu Gln Ser His
100 105 110
Arg Pro Ala Ile Val Arg Arg Leu His Ser His Val Glu Asn Met Leu
115 120 125
Asp Leu Ala Trp Glu Arg Gly Phe Val Ser Gln Tyr Glu Cys Asp Glu
130 135 140
Ile Arg Leu Pro Ile Phe Thr Pro Ser Gln Arg Ala Arg Arg Leu Leu
145 150 155 160
Asp Leu Ala Thr Val Lys Ala Asn Gly Leu Ala Ala Phe Leu Leu Gln
165 170 175
His Val Gln Glu Leu Pro Val Pro Leu Ala Leu Pro Leu Glu Ala Ala
180 185 190
Thr Cys Lys Lys Tyr Met Ala Lys Leu Arg Thr Thr Val Ser Ala Gln
195 200 205
Ser Arg Phe Leu Ser Thr Tyr Asp Gly Ala Glu Thr Leu Cys Leu Glu
210 215 220
Asp Ile Tyr Thr Glu Asn Val Leu Glu Val Trp Ala Asp Val Gly Met
225 230 235 240
Ala Gly Pro Pro Gln Lys Ser Pro Ala Thr Leu Gly Leu Glu Glu Leu
245 250 255
Phe Ser Thr Pro Gly His Leu Asn Asp Asp Ala Asp Thr Val Leu Val
260 265 270
Val Gly Glu Ala Gly Ser Gly Lys Ser Thr Leu Leu Gln Arg Leu His
275 280 285
Leu Leu Trp Ala Ala Gly Gln Asp Phe Gln Glu Phe Leu Phe Val Phe
290 295 300
Pro Phe Ser Cys Arg Gln Leu Gln Cys Met Ala Lys Pro Leu Ser Val
305 310 315 320
Arg Thr Leu Leu Phe Glu His Cys Cys Trp Pro Asp Val Gly Gln Glu
325 330 335
Asp Ile Phe Gln Leu Leu Leu Asp His Pro Asp Arg Val Leu Leu Thr
340 345 350
Phe Asp Gly Phe Asp Glu Phe Lys Phe Arg Phe Thr Asp Arg Glu Arg
355 360 365
His Cys Ser Pro Thr Asp Pro Thr Ser Val Gln Thr Leu Leu Phe Asn
370 375 380
Leu Leu Gln Gly Asn Leu Leu Lys Asn Ala Arg Lys Val Val Thr Ser
385 390 395 400
Arg Pro Ala Ala Val Ser Ala Phe Leu Arg Lys Tyr Ile Arg Thr Glu
405 410 415
Phe Asn Leu Lys Gly Phe Ser Glu Gln Gly Ile Glu Leu Tyr Leu Arg
420 425 430
Lys Arg His His Glu Pro Gly Val Ala Asp Arg Leu Ile Arg Leu Leu
435 440 445
Gln Glu Thr Ser Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser
450 455 460
Trp Met Val Ser Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly
465 470 475 480

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Ser Pro Lys Thr Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe
                485                 490                 495
Leu Leu His Ala Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro
            500                 505                 510
Ser Leu Leu Arg Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu
        515                 520                 525
Ala Leu Trp Gly Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln
    530                 535                 540
Leu Gln Ala Ala Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu
545                 550                 555                 560
Val Arg Ala Lys Gly Val Val Pro Gly Ser Thr Ala Pro Leu Glu Phe
                565                 570                 575
Leu His Ile Thr Phe Gln Cys Phe Phe Ala Ala Phe Tyr Leu Ala Leu
            580                 585                 590
Ser Ala Asp Val Pro Pro Ala Leu Leu Arg His Leu Phe Asn Cys Gly
        595                 600                 605
Arg Pro Gly Asn Ser Pro Met Ala Arg Leu Leu Pro Thr Met Cys Ile
    610                 615                 620
Gln Ala Ser Glu Gly Lys Asp Ser Ser Val Ala Ala Leu Leu Gln Lys
625                 630                 635                 640
Ala Glu Pro His Asn Leu Gln Ile Thr Ala Ala Phe Leu Ala Gly Leu
                645                 650                 655
Leu Ser Arg Glu His Trp Gly Leu Leu Ala Glu Cys Gln Thr Ser Glu
            660                 665                 670
Lys Ala Leu Leu Arg Arg Gln Ala Cys Ala Arg Trp Cys Leu Ala Arg
        675                 680                 685
Ser Leu Arg Lys His Phe His Ser Ile Pro Pro Ala Ala Pro Gly Glu
    690                 695                 700
Ala Lys Ser Val His Ala Met Pro Gly Phe Ile Trp Leu Ile Arg Ser
705                 710                 715                 720
Leu Tyr Glu Met Gln Glu Glu Arg Leu Ala Arg Lys Ala Ala Arg Gly
                725                 730                 735
Leu Asn Val Gly His Leu Lys Leu Thr Phe Cys Ser Val Gly Pro Thr
            740                 745                 750
Glu Cys Ala Ala Leu Ala Phe Val Leu Gln His Leu Arg Arg Pro Val
        755                 760                 765
Ala Leu Gln Leu Asp Tyr Asn Ser Val Gly Asp Ile Gly Val Glu Gln
    770                 775                 780
Leu Leu Pro Cys Leu Gly Val Cys Lys Ala Leu Tyr Leu Arg Asp Asn
785                 790                 795                 800
Asn Ile Ser Asp Arg Gly Ile Cys Lys Leu Ile Glu Cys Ala Leu His
                805                 810                 815
Cys Glu Gln Leu Gln Lys Leu Ala Leu Gly Asn Asn Tyr Ile Thr Ala
            820                 825                 830
Ala Gly Ala Gln Val Leu Ala Glu Gly Leu Arg Gly Asn Thr Ser Leu
        835                 840                 845
Gln Phe Leu Gly Phe Trp Gly Asn Arg Val Gly Asp Glu Gly Ala Gln
    850                 855                 860
Ala Leu Ala Glu Ala Leu Gly Asp His Gln Ser Leu Arg Trp Leu Ser
865                 870                 875                 880
Leu Val Gly Asn Asn Ile Gly Ser Val Gly Ala Gln Ala Leu Ala Leu
                885                 890                 895
Met Leu Ala Lys Asn Val Met Leu Glu Glu Leu Cys Leu Glu Glu Asn
```

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            900                 905                 910
His Leu Gln Asp Glu Gly Val Cys Ser Leu Ala Glu Gly Leu Lys Lys
        915                 920                 925
Asn Ser Ser Leu Lys Ile Leu Asn Ile Lys Ile His Ala Ser Gly Phe
    930                 935                 940
Asn Lys Leu Leu Glu Ser Ile Phe Cys Ile Leu Leu Val Val Glu Ala
945                 950                 955                 960
Phe Phe Leu Gln Lys Val Val Lys Ile Leu Glu Glu Met Val Val Ser
                965                 970                 975
Trp Leu Glu Val Arg Leu Ser Asn Asn Cys Ile Thr Tyr Leu Gly Ala
            980                 985                 990
Glu Ala Leu Leu Gln Ala Leu Glu Arg Asn Asp Thr Ile Leu Glu Val
        995                 1000                1005
Trp
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<400> 108
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<210> 109

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<210> 112

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<222> (1)...(87)
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<210> 137

<400> 137
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<210> 138

<400> 138
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<210> 139

<400> 139
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<210> 140

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<210> 141

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<210> 142

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<210> 143

<400> 143
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<210> 144

<400> 144
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<210> 145
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 145
ccagaattca tggccgacaa ggtcctgaag 30

<210> 146
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 146
ccactcgagc taatttccag gtatcggacc 30

<210> 147
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 147
gaagacagtt acctggcaga 20

<210> 148
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 148
ttgtattctg aacatggcac c 21

<210> 149
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 149
gatcatcatc caggccgccc gtggtgacag ccctgg 36

<210> 150
<211> 36
<212> DNA

<213> Artificial Sequence

<220>
<223> primer

<400> 150
ccagggctgt caccacgggc ggcctggatg atgatc 36

<210> 151
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 151
cggaattcat ggccgacaag gtcctg 26

<210> 152
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 152
cgctcgagtt agtcttgcat attaaggtaa tttccaga 38

<210> 153
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 153
catgtgaatg atccctctag cag 23

<210> 154
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 154
gggctcggct atcgtgctct a 21

<210> 155

<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 155
acgatagccg agcccttatt c 21

<210> 156
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 156
gtatggaatg ttctgaatcg c 21

<210> 157
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 157
cccggatcca tgaatttcat aaaggacaat agc 33

<210> 158
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 158
cccttcgaac aagtcctgaa atagaggata 30

<210> 159
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 159
ggtggagcag gatgctgcta gagg 24

<210> 160
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 160
cacagtggtc caggctccga atgaagtca 29

<210> 161
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 161
catcatttgc tgcgagaagg tggag 25

<210> 162
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 162
ttaacttgga taacacttgg ctaag 25

<210> 163
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 163
gtaaacatca tttgctgcga gaa 23

<210> 164
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 164
cccgggcagg tagaagatgc tat 23

<210> 165
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 165
aatttcataa aggacaatag ccgag 25

<210> 166
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 166
tgtctactgt actttctaag ctgtt 25

<210> 167
<211> 225
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(225)

<400> 167

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gag agt act ccc tca gag atc ata gaa aga gaa aga aaa aag ttg ctt   48
Glu Ser Thr Pro Ser Glu Ile Ile Glu Arg Glu Arg Lys Lys Leu Leu
 1               5                  10                  15

gaa atc ctt caa cat gat cct gat tct atc tta gac acg tta act tct   96
Glu Ile Leu Gln His Asp Pro Asp Ser Ile Leu Asp Thr Leu Thr Ser
            20                  25                  30

cgg agg ctg att tct gag gaa gag tat gag act ctg gag aat gtt aca   144
Arg Arg Leu Ile Ser Glu Glu Glu Tyr Glu Thr Leu Glu Asn Val Thr
        35                  40                  45

gat ctc ctg aag aaa agt cgg aag ctg tta att ttg gta cag aaa aag   192
Asp Leu Leu Lys Lys Ser Arg Lys Leu Leu Ile Leu Val Gln Lys Lys
    50                  55                  60

gga gag gcg acc tgt cag cat ttt ctc aag tgt                      225
Gly Glu Ala Thr Cys Gln His Phe Leu Lys Cys
```

65 70 75

<210> 168
<211> 75
<212> PRT
<213> Homo sapiens

<400> 168
Glu Ser Thr Pro Ser Glu Ile Ile Glu Arg Glu Arg Lys Lys Leu Leu
1 5 10 15
Glu Ile Leu Gln His Asp Pro Asp Ser Ile Leu Asp Thr Leu Thr Ser
20 25 30
Arg Arg Leu Ile Ser Glu Glu Glu Tyr Glu Thr Leu Glu Asn Val Thr
35 40 45
Asp Leu Leu Lys Lys Ser Arg Lys Leu Leu Ile Leu Val Gln Lys Lys
50 55 60
Gly Glu Ala Thr Cys Gln His Phe Leu Lys Cys
65 70 75

<210> 169
<211> 228
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(228)

<400> 169
atg tgc tcg cag gag gct ttt cag gca cag agg agc cag ctg gtc gag 48
Met Cys Ser Gln Glu Ala Phe Gln Ala Gln Arg Ser Gln Leu Val Glu
1 5 10 15

ctg ctg gtc tca ggg tcc ctg gaa ggc ttc gag agt gtc ctg gac tgg 96
Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu Asp Trp
20 25 30

ctg ctg tcc tgg gag gtc ctc tcc tgg gag gac tac gag ggc ttc cac 144
Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly Phe His
35 40 45

ctc ctg ggc cag cct ctc tcc cac ttg gcc agg cgc ctt ctg gac acc 192
Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu Asp Thr
50 55 60

gtc tgg aat aag ggt act tgg gcc tgt cag aag ctc 228
Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu
65 70 75

<210> 170

<211> 76
<212> PRT
<213> Homo sapiens

<400> 170

```
Met Cys Ser Gln Glu Ala Phe Gln Ala Gln Arg Ser Gln Leu Val Glu
 1               5                  10                  15
Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu Asp Trp
            20                  25                  30
Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly Phe His
        35                  40                  45
Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu Asp Thr
    50                  55                  60
Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu
65                  70                  75
```

<210> 171
<211> 243
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(243)

<400> 171

```
cca gcc cga gac ctg cag agt cac cgg cca gcc att gtc agg agg ctc   48
Pro Ala Arg Asp Leu Gln Ser His Arg Pro Ala Ile Val Arg Arg Leu
 1               5                  10                  15

cac agc cat gtg gag aac atg ctg gac ctg gca tgg gag cgg ggt ttc   96
His Ser His Val Glu Asn Met Leu Asp Leu Ala Trp Glu Arg Gly Phe
            20                  25                  30

gtc agc cag tat gaa tgt gat gaa atc agg ttg ccg atc ttc aca ccg   144
Val Ser Gln Tyr Glu Cys Asp Glu Ile Arg Leu Pro Ile Phe Thr Pro
        35                  40                  45

tcc cag agg gca aga agg ctg ctt gat ctt gcc acg gtg aaa gcg aat   192
Ser Gln Arg Ala Arg Arg Leu Leu Asp Leu Ala Thr Val Lys Ala Asn
    50                  55                  60

gga ttg gct gcc ttc ctt cta caa cat gtt cag gaa tta cca gtc cca   240
Gly Leu Ala Ala Phe Leu Leu Gln His Val Gln Glu Leu Pro Val Pro
65                  70                  75                  80

ttg                                                             243
Leu
```

<210> 172

<211> 81
<212> PRT
<213> Homo sapiens

<400> 172
Pro Ala Arg Asp Leu Gln Ser His Arg Pro Ala Ile Val Arg Arg Leu
 1   5   10   15
His Ser His Val Glu Asn Met Leu Asp Leu Ala Trp Glu Arg Gly Phe
            20   25   30
Val Ser Gln Tyr Glu Cys Asp Glu Ile Arg Leu Pro Ile Phe Thr Pro
        35   40   45
Ser Gln Arg Ala Arg Arg Leu Leu Asp Leu Ala Thr Val Lys Ala Asn
    50   55   60
Gly Leu Ala Ala Phe Leu Leu Gln His Val Gln Glu Leu Pro Val Pro
65   70   75   80
Leu

<210> 173
<211> 888
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(888)

<400> 173
gac gat gcg gac act gtg ctg gtg gtg ggt gag gcg ggc agt ggc aag 48
Asp Asp Ala Asp Thr Val Leu Val Val Gly Glu Ala Gly Ser Gly Lys
 1   5   10   15

agc acg ctc ctg cag cgg ctg cac ttg ctg tgg gct gca ggg caa gac 96
Ser Thr Leu Leu Gln Arg Leu His Leu Leu Trp Ala Ala Gly Gln Asp
            20   25   30

ttc cag gaa ttt ctc ttt gtc ttc cca ttc agc tgc cgg cag ctg cag 144
Phe Gln Glu Phe Leu Phe Val Phe Pro Phe Ser Cys Arg Gln Leu Gln
        35   40   45

tgc atg gcc aaa cca ctc tct gtg cgg act cta ctc ttt gag cac tgc 192
Cys Met Ala Lys Pro Leu Ser Val Arg Thr Leu Leu Phe Glu His Cys
    50   55   60

tgt tgg cct gat gtt ggt caa gaa gac atc ttc cag tta ctc ctt gac 240
Cys Trp Pro Asp Val Gly Gln Glu Asp Ile Phe Gln Leu Leu Leu Asp
65   70   75   80

cac cct gac cgt gtc ctg tta acc ttt gat ggc ttt gac gag ttc aag 288
His Pro Asp Arg Val Leu Leu Thr Phe Asp Gly Phe Asp Glu Phe Lys
                85   90   95

```
ttc agg ttc acg gat cgt gaa cgc cac tgc tcc ccg acc gac ccc acc   336
Phe Arg Phe Thr Asp Arg Glu Arg His Cys Ser Pro Thr Asp Pro Thr
            100                 105                 110

tct gtc cag acc ctg ctc ttc aac ctt ctg cag ggc aac ctg ctg aag   384
Ser Val Gln Thr Leu Leu Phe Asn Leu Leu Gln Gly Asn Leu Leu Lys
        115                 120                 125

aat gcc cgc aag gtg gtg acc agc cgt ccg gcc gct gtg tcg gcg ttc   432
Asn Ala Arg Lys Val Val Thr Ser Arg Pro Ala Ala Val Ser Ala Phe
    130                 135                 140

ctc agg aag tac atc cgc acc gag ttc aac ctc aag ggc ttc tct gaa   480
Leu Arg Lys Tyr Ile Arg Thr Glu Phe Asn Leu Lys Gly Phe Ser Glu
145                 150                 155                 160

cag ggc atc gag ctg tac ctg agg aag cgc cat cat gag ccc ggg gtg   528
Gln Gly Ile Glu Leu Tyr Leu Arg Lys Arg His His Glu Pro Gly Val
                165                 170                 175

gcg gac cgc ctc atc cgc ctg ctc caa gag acc tca gcc ctg cac ggt   576
Ala Asp Arg Leu Ile Arg Leu Leu Gln Glu Thr Ser Ala Leu His Gly
            180                 185                 190

ttg tgc cac ctg cct gtc ttc tca tgg atg gtg tcc aaa tgc cac cag   624
Leu Cys His Leu Pro Val Phe Ser Trp Met Val Ser Lys Cys His Gln
        195                 200                 205

gaa ctg ttg ctg cag gag ggg ggg tcc cca aag acc act aca gat atg   672
Glu Leu Leu Leu Gln Glu Gly Gly Ser Pro Lys Thr Thr Thr Asp Met
    210                 215                 220

tac ctg ctg att ctg cag cat ttt ctg ctg cat gcc acc ccc cca gac   720
Tyr Leu Leu Ile Leu Gln His Phe Leu Leu His Ala Thr Pro Pro Asp
225                 230                 235                 240

tca gct tcc caa ggt ctg gga ccc agt ctt ctt cgg ggc cgc ctc ccc   768
Ser Ala Ser Gln Gly Leu Gly Pro Ser Leu Leu Arg Gly Arg Leu Pro
                245                 250                 255

acc ctc ctg cac ctg ggc aga ctg gct ctg tgg ggc ctg ggc atg tgc   816
Thr Leu Leu His Leu Gly Arg Leu Ala Leu Trp Gly Leu Gly Met Cys
            260                 265                 270

tgc tac gtg ttc tca gcc cag cag ctc cag gca gca cag gtc agc cct   864
Cys Tyr Val Phe Ser Ala Gln Gln Leu Gln Ala Ala Gln Val Ser Pro
        275                 280                 285

gat gac att tct ctt ggc ttc ctg                                  888
Asp Asp Ile Ser Leu Gly Phe Leu
    290                 295
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<210> 174
<211> 296
<212> PRT
<213> Homo sapiens

<400> 174
Asp Asp Ala Asp Thr Val Leu Val Val Gly Glu Ala Gly Ser Gly Lys
 1   5   10   15
Ser Thr Leu Leu Gln Arg Leu His Leu Leu Trp Ala Ala Gly Gln Asp
            20   25   30
Phe Gln Glu Phe Leu Phe Val Phe Pro Phe Ser Cys Arg Gln Leu Gln
        35   40   45
Cys Met Ala Lys Pro Leu Ser Val Arg Thr Leu Leu Phe Glu His Cys
    50   55   60
Cys Trp Pro Asp Val Gly Gln Glu Asp Ile Phe Gln Leu Leu Leu Asp
65   70   75   80
His Pro Asp Arg Val Leu Leu Thr Phe Asp Gly Phe Asp Glu Phe Lys
                85   90   95
Phe Arg Phe Thr Asp Arg Glu Arg His Cys Ser Pro Thr Asp Pro Thr
            100   105   110
Ser Val Gln Thr Leu Leu Phe Asn Leu Leu Gln Gly Asn Leu Leu Lys
        115   120   125
Asn Ala Arg Lys Val Val Thr Ser Arg Pro Ala Ala Val Ser Ala Phe
    130   135   140
Leu Arg Lys Tyr Ile Arg Thr Glu Phe Asn Leu Lys Gly Phe Ser Glu
145   150   155   160
Gln Gly Ile Glu Leu Tyr Leu Arg Lys Arg His His Glu Pro Gly Val
                165   170   175
Ala Asp Arg Leu Ile Arg Leu Leu Gln Glu Thr Ser Ala Leu His Gly
            180   185   190
Leu Cys His Leu Pro Val Phe Ser Trp Met Val Ser Lys Cys His Gln
        195   200   205
Glu Leu Leu Leu Gln Glu Gly Gly Ser Pro Lys Thr Thr Thr Asp Met
    210   215   220
Tyr Leu Leu Ile Leu Gln His Phe Leu Leu His Ala Thr Pro Pro Asp
225   230   235   240
Ser Ala Ser Gln Gly Leu Gly Pro Ser Leu Leu Arg Gly Arg Leu Pro
                245   250   255
Thr Leu Leu His Leu Gly Arg Leu Ala Leu Trp Gly Leu Gly Met Cys
            260   265   270
Cys Tyr Val Phe Ser Ala Gln Gln Leu Gln Ala Ala Gln Val Ser Pro
        275   280   285
Asp Asp Ile Ser Leu Gly Phe Leu
    290   295

<210> 175
<211> 1209
<212> DNA
<213> Homo sapiens

<220>
<221> CDS

<222> (1)...(1209)

<400> 175

gag ccc ggg gtg gcg gac cgc ctc atc cgc ctg ctc caa gag acc tca 48
Glu Pro Gly Val Ala Asp Arg Leu Ile Arg Leu Leu Gln Glu Thr Ser
1 5 10 15

gcc ctg cac ggt ttg tgc cac ctg cct gtc ttc tca tgg atg gtg tcc 96
Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser Trp Met Val Ser
20 25 30

aaa tgc cac cag gaa ctg ttg ctg cag gag ggg ggg tcc cca aag acc 144
Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly Ser Pro Lys Thr
35 40 45

act aca gat atg tac ctg ctg att ctg cag cat ttt ctg ctg cat gcc 192
Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe Leu Leu His Ala
50 55 60

acc ccc cca gac tca gct tcc caa ggt ctg gga ccc agt ctt ctt cgg 240
Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro Ser Leu Leu Arg
65 70 75 80

ggc cgc ctc ccc acc ctc ctg cac ctg ggc aga ctg gct ctg tgg ggc 288
Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu Ala Leu Trp Gly
85 90 95

ctg ggc atg tgc tgc tac gtg ttc tca gcc cag cag ctc cag gca gca 336
Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln Leu Gln Ala Ala
100 105 110

cag gtc agc cct gat gac att tct ctt ggc ttc ctg gtg cgt gcc aaa 384
Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu Val Arg Ala Lys
115 120 125

ggt gtc gtg cca ggg agt acg gcg ccc ctg gaa ttc ctt cac atc act 432
Gly Val Val Pro Gly Ser Thr Ala Pro Leu Glu Phe Leu His Ile Thr
130 135 140

ttc cag tgc ttc ttt gcc gcg ttc tac ctg gca ctc agt gct gat gtg 480
Phe Gln Cys Phe Phe Ala Ala Phe Tyr Leu Ala Leu Ser Ala Asp Val
145 150 155 160

cca cca gct ttg ctc aga cac ctc ttc aat tgt ggc agg cca ggc aac 528
Pro Pro Ala Leu Leu Arg His Leu Phe Asn Cys Gly Arg Pro Gly Asn
165 170 175

tca cca atg gcc agg ctc ctg ccc acg atg tgc atc cag gcc tcg gag 576
Ser Pro Met Ala Arg Leu Leu Pro Thr Met Cys Ile Gln Ala Ser Glu
180 185 190

gga aag gac agc agc gtg gca gct ttg ctg cag aag gcc gag ccg cac 624
Gly Lys Asp Ser Ser Val Ala Ala Leu Leu Gln Lys Ala Glu Pro His

```
        195                 200                 205

aac ctt cag atc aca gca gcc ttc ctg gca ggg ctg ttg tcc cgg gag   672
Asn Leu Gln Ile Thr Ala Ala Phe Leu Ala Gly Leu Leu Ser Arg Glu
    210                 215                 220

cac tgg ggc ctg ctg gct gag tgc cag aca tct gag aag gcc ctg ctc   720
His Trp Gly Leu Leu Ala Glu Cys Gln Thr Ser Glu Lys Ala Leu Leu
225                 230                 235                 240

cgg cgc cag gcc tgt gcc cgc tgg tgt ctg gcc cgc agc ctc cgc aag   768
Arg Arg Gln Ala Cys Ala Arg Trp Cys Leu Ala Arg Ser Leu Arg Lys
                245                 250                 255

cac ttc cac tcc atc ccg cca gct gca ccg ggt gag gcc aag agc gtg   816
His Phe His Ser Ile Pro Pro Ala Ala Pro Gly Glu Ala Lys Ser Val
            260                 265                 270

cat gcc atg ccc ggg ttc atc tgg ctc atc cgg agc ctg tac gag atg   864
His Ala Met Pro Gly Phe Ile Trp Leu Ile Arg Ser Leu Tyr Glu Met
        275                 280                 285

cag gag gag cgg ctg gct cgg aag gct gca cgt ggc ctg aat gtt ggg   912
Gln Glu Glu Arg Leu Ala Arg Lys Ala Ala Arg Gly Leu Asn Val Gly
    290                 295                 300

cac ctc aag ttg aca ttt tgc agt gtg ggc ccc act gag tgt gct gcc   960
His Leu Lys Leu Thr Phe Cys Ser Val Gly Pro Thr Glu Cys Ala Ala
305                 310                 315                 320

ctg gcc ttt gtg ctg cag cac ctc cgg cgg ccc gtg gcc ctg cag ctg  1008
Leu Ala Phe Val Leu Gln His Leu Arg Arg Pro Val Ala Leu Gln Leu
                325                 330                 335

gac tac aac tct gtg ggt gac att ggc gtg gag cag ctg ctg cct tgc  1056
Asp Tyr Asn Ser Val Gly Asp Ile Gly Val Glu Gln Leu Leu Pro Cys
            340                 345                 350

ctt ggt gtc tgc aag gct ctg tat ttg cgc gat aac aat atc tca gac  1104
Leu Gly Val Cys Lys Ala Leu Tyr Leu Arg Asp Asn Asn Ile Ser Asp
        355                 360                 365

cga ggc atc tgc aag ctc att gaa tgt gct ctt cac tgc gag caa ttg  1152
Arg Gly Ile Cys Lys Leu Ile Glu Cys Ala Leu His Cys Glu Gln Leu
    370                 375                 380

cag aag tta gcg ctg ggg aat aac tac atc act gcc gcg gga gcc caa  1200
Gln Lys Leu Ala Leu Gly Asn Asn Tyr Ile Thr Ala Ala Gly Ala Gln
385                 390                 395                 400

gtg ctg gcc                                                     1209
Val Leu Ala
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<210> 176
<211> 403
<212> PRT
<213> Homo sapiens

<400> 176
Glu Pro Gly Val Ala Asp Arg Leu Ile Arg Leu Leu Gln Glu Thr Ser
1 5 10 15
Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser Trp Met Val Ser
20 25 30
Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly Ser Pro Lys Thr
35 40 45
Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe Leu Leu His Ala
50 55 60
Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro Ser Leu Leu Arg
65 70 75 80
Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu Ala Leu Trp Gly
85 90 95
Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln Leu Gln Ala Ala
100 105 110
Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu Val Arg Ala Lys
115 120 125
Gly Val Val Pro Gly Ser Thr Ala Pro Leu Glu Phe Leu His Ile Thr
130 135 140
Phe Gln Cys Phe Phe Ala Ala Phe Tyr Leu Ala Leu Ser Ala Asp Val
145 150 155 160
Pro Pro Ala Leu Leu Arg His Leu Phe Asn Cys Gly Arg Pro Gly Asn
165 170 175
Ser Pro Met Ala Arg Leu Leu Pro Thr Met Cys Ile Gln Ala Ser Glu
180 185 190
Gly Lys Asp Ser Ser Val Ala Ala Leu Leu Gln Lys Ala Glu Pro His
195 200 205
Asn Leu Gln Ile Thr Ala Ala Phe Leu Ala Gly Leu Leu Ser Arg Glu
210 215 220
His Trp Gly Leu Leu Ala Glu Cys Gln Thr Ser Glu Lys Ala Leu Leu
225 230 235 240
Arg Arg Gln Ala Cys Ala Arg Trp Cys Leu Ala Arg Ser Leu Arg Lys
245 250 255
His Phe His Ser Ile Pro Pro Ala Ala Pro Gly Glu Ala Lys Ser Val
260 265 270
His Ala Met Pro Gly Phe Ile Trp Leu Ile Arg Ser Leu Tyr Glu Met
275 280 285
Gln Glu Glu Arg Leu Ala Arg Lys Ala Ala Arg Gly Leu Asn Val Gly
290 295 300
His Leu Lys Leu Thr Phe Cys Ser Val Gly Pro Thr Glu Cys Ala Ala
305 310 315 320
Leu Ala Phe Val Leu Gln His Leu Arg Arg Pro Val Ala Leu Gln Leu
325 330 335
Asp Tyr Asn Ser Val Gly Asp Ile Gly Val Glu Gln Leu Leu Pro Cys
340 345 350
Leu Gly Val Cys Lys Ala Leu Tyr Leu Arg Asp Asn Asn Ile Ser Asp

```
        355                 360                 365
Arg Gly Ile Cys Lys Leu Ile Glu Cys Ala Leu His Cys Glu Gln Leu
    370                 375                 380
Gln Lys Leu Ala Leu Gly Asn Asn Tyr Ile Thr Ala Ala Gly Ala Gln
385                 390                 395                 400
Val Leu Ala
```

<210> 177
<211> 261
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(261)

<400> 177

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atg aat ttc ata aag gac aat agc cga gcc ctt att caa aga atg gga   48
Met Asn Phe Ile Lys Asp Asn Ser Arg Ala Leu Ile Gln Arg Met Gly
 1               5                  10                  15

atg act gtt ata aag caa atc aca gat gac cta ttt gta tgg aat gtt   96
Met Thr Val Ile Lys Gln Ile Thr Asp Asp Leu Phe Val Trp Asn Val
            20                  25                  30

ctg aat cgc gaa gaa gta aac atc att tgc tgc gag aag gtg gag cag   144
Leu Asn Arg Glu Glu Val Asn Ile Ile Cys Cys Glu Lys Val Glu Gln
        35                  40                  45

gat gct gct aga ggg atc att cac atg att ttg aaa aag ggt tca gag   192
Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu
    50                  55                  60

tcc tgt aac ctc ttt ctt aaa tcc ctt aag gag tgg aac tat cct cta   240
Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu
65                  70                  75                  80

ttt cag gac ttg aat gga caa                                      261
Phe Gln Asp Leu Asn Gly Gln
                85
```

<210> 178
<211> 87
<212> PRT
<213> Homo sapiens

<400> 178

```
Met Asn Phe Ile Lys Asp Asn Ser Arg Ala Leu Ile Gln Arg Met Gly
 1               5                  10                  15
Met Thr Val Ile Lys Gln Ile Thr Asp Asp Leu Phe Val Trp Asn Val
```

```
            20                  25                  30
Leu Asn Arg Glu Glu Val Asn Ile Ile Cys Cys Glu Lys Val Glu Gln
        35                  40                  45
Asp Ala Ala Arg Gly Ile Ile His Met Ile Leu Lys Lys Gly Ser Glu
    50                  55                  60
Ser Cys Asn Leu Phe Leu Lys Ser Leu Lys Glu Trp Asn Tyr Pro Leu
65                  70                  75                  80
Phe Gln Asp Leu Asn Gly Gln
                85
```

<210> 179
<211> 891
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(891)

<400> 179

```
ctt cag agc ccc tgc atc att gaa ggg gaa tct ggc aaa ggc aag tcc   48
Leu Gln Ser Pro Cys Ile Ile Glu Gly Glu Ser Gly Lys Gly Lys Ser
 1               5                  10                  15

act ctg ctg cag cgc att gcc atg ctc tgg ggc tcc gga aag tgc aag   96
Thr Leu Leu Gln Arg Ile Ala Met Leu Trp Gly Ser Gly Lys Cys Lys
             20                  25                  30

gct ctg acc aag ttc aaa ttc gtc ttc ttc ctc cgt ctc agc agg gcc   144
Ala Leu Thr Lys Phe Lys Phe Val Phe Phe Leu Arg Leu Ser Arg Ala
         35                  40                  45

cag ggt gga ctt ttt gaa acc ctc tgt gat caa ctc ctg gat ata cct   192
Gln Gly Gly Leu Phe Glu Thr Leu Cys Asp Gln Leu Leu Asp Ile Pro
     50                  55                  60

ggc aca atc agg aag cag aca ttc atg gcc atg ctg ctg aag ctg cgg   240
Gly Thr Ile Arg Lys Gln Thr Phe Met Ala Met Leu Leu Lys Leu Arg
 65                  70                  75                  80

cag agg gtt ctt ttc ctt ctt gat ggc tac aat gaa ttc aag ccc cag   288
Gln Arg Val Leu Phe Leu Leu Asp Gly Tyr Asn Glu Phe Lys Pro Gln
                 85                  90                  95

aac tgc cca gaa atc gaa gcc ctg ata aag gaa aac cac cgc ttc aag   336
Asn Cys Pro Glu Ile Glu Ala Leu Ile Lys Glu Asn His Arg Phe Lys
            100                 105                 110

aac atg gtc atc gtc acc act acc act gag tgc ctg agg cac ata cgg   384
Asn Met Val Ile Val Thr Thr Thr Thr Glu Cys Leu Arg His Ile Arg
        115                 120                 125
```

```
cag ttt ggt gcc ctg act gct gag gtg ggg gat atg aca gaa gac agc   432
Gln Phe Gly Ala Leu Thr Ala Glu Val Gly Asp Met Thr Glu Asp Ser
    130                 135                 140

gcc cag gct ctc atc cga gaa gtg ctg atc aag gag ctt gct gaa ggc   480
Ala Gln Ala Leu Ile Arg Glu Val Leu Ile Lys Glu Leu Ala Glu Gly
145                 150                 155                 160

ttg ttg ctc caa att cag aaa tcc agg tgc ttg agg aat ctc atg aag   528
Leu Leu Leu Gln Ile Gln Lys Ser Arg Cys Leu Arg Asn Leu Met Lys
                165                 170                 175

acc cct ctc ttt gtg gtc atc act tgt gca atc cag atg ggt gaa agt   576
Thr Pro Leu Phe Val Val Ile Thr Cys Ala Ile Gln Met Gly Glu Ser
            180                 185                 190

gag ttc cac tct cac aca caa aca acg ctg ttc cat acc ttc tat gat   624
Glu Phe His Ser His Thr Gln Thr Thr Leu Phe His Thr Phe Tyr Asp
        195                 200                 205

ctg ttg ata cag aaa aac aaa cac aaa cat aaa ggt gtg gct gca agt   672
Leu Leu Ile Gln Lys Asn Lys His Lys His Lys Gly Val Ala Ala Ser
    210                 215                 220

gac ttc att cgg agc ctg gac cac cgt gga gac cta gct ctg gag ggt   720
Asp Phe Ile Arg Ser Leu Asp His Arg Gly Asp Leu Ala Leu Glu Gly
225                 230                 235                 240

gtg ttc tcc cac aag ttt gat ttc gaa ctg cag gat gtg tcc agc gtg   768
Val Phe Ser His Lys Phe Asp Phe Glu Leu Gln Asp Val Ser Ser Val
                245                 250                 255

aat gag gat gtc ctg ctg aca act ggg ctc ctc tgt aaa tat aca gct   816
Asn Glu Asp Val Leu Leu Thr Thr Gly Leu Leu Cys Lys Tyr Thr Ala
            260                 265                 270

caa agg ttc aag cca aag tat aaa ttc ttt cac aag tca ttc cag gag   864
Gln Arg Phe Lys Pro Lys Tyr Lys Phe Phe His Lys Ser Phe Gln Glu
        275                 280                 285

tac aca gca gga cga aga ctc agc agt                               891
Tyr Thr Ala Gly Arg Arg Leu Ser Ser
    290                 295
```

<210> 180
<211> 297
<212> PRT
<213> Homo sapiens

<400> 180

```
Leu Gln Ser Pro Cys Ile Ile Glu Gly Glu Ser Gly Lys Gly Lys Ser
 1               5                  10                  15
```

```
Thr Leu Leu Gln Arg Ile Ala Met Leu Trp Gly Ser Gly Lys Cys Lys
            20                  25                  30
Ala Leu Thr Lys Phe Lys Phe Val Phe Phe Leu Arg Leu Ser Arg Ala
        35                  40                  45
Gln Gly Gly Leu Phe Glu Thr Leu Cys Asp Gln Leu Leu Asp Ile Pro
    50                  55                  60
Gly Thr Ile Arg Lys Gln Thr Phe Met Ala Met Leu Leu Lys Leu Arg
65                  70                  75                  80
Gln Arg Val Leu Phe Leu Leu Asp Gly Tyr Asn Glu Phe Lys Pro Gln
                85                  90                  95
Asn Cys Pro Glu Ile Glu Ala Leu Ile Lys Glu Asn His Arg Phe Lys
            100                 105                 110
Asn Met Val Ile Val Thr Thr Thr Thr Glu Cys Leu Arg His Ile Arg
        115                 120                 125
Gln Phe Gly Ala Leu Thr Ala Glu Val Gly Asp Met Thr Glu Asp Ser
    130                 135                 140
Ala Gln Ala Leu Ile Arg Glu Val Leu Ile Lys Glu Leu Ala Glu Gly
145                 150                 155                 160
Leu Leu Leu Gln Ile Gln Lys Ser Arg Cys Leu Arg Asn Leu Met Lys
                165                 170                 175
Thr Pro Leu Phe Val Val Ile Thr Cys Ala Ile Gln Met Gly Glu Ser
            180                 185                 190
Glu Phe His Ser His Thr Gln Thr Thr Leu Phe His Thr Phe Tyr Asp
        195                 200                 205
Leu Leu Ile Gln Lys Asn Lys His Lys His Lys Gly Val Ala Ala Ser
    210                 215                 220
Asp Phe Ile Arg Ser Leu Asp His Arg Gly Asp Leu Ala Leu Glu Gly
225                 230                 235                 240
Val Phe Ser His Lys Phe Asp Phe Glu Leu Gln Asp Val Ser Ser Val
                245                 250                 255
Asn Glu Asp Val Leu Leu Thr Thr Gly Leu Leu Cys Lys Tyr Thr Ala
            260                 265                 270
Gln Arg Phe Lys Pro Lys Tyr Lys Phe Phe His Lys Ser Phe Gln Glu
        275                 280                 285
Tyr Thr Ala Gly Arg Arg Leu Ser Ser
    290                 295
```

<210> 181
<211> 618
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(618)

<400> 181

```
ggt aac ttg aag aac ctt aca aag ctc ata atg gat aac ata aag atg   48
Gly Asn Leu Lys Asn Leu Thr Lys Leu Ile Met Asp Asn Ile Lys Met
 1               5                  10                  15

aat gaa gaa gat gct ata aaa cta gct gaa ggc ctg aaa aac ctg aag   96
```

```
Asn Glu Glu Asp Ala Ile Lys Leu Ala Glu Gly Leu Lys Asn Leu Lys
             20                  25                  30

aag atg tgt tta ttt cat ttg acc cac ttg tct gac att gga gag gga   144
Lys Met Cys Leu Phe His Leu Thr His Leu Ser Asp Ile Gly Glu Gly
         35                  40                  45

atg gat tac ata gtc aag tct ctg tca agt gaa ccc tgt gac ctt gaa   192
Met Asp Tyr Ile Val Lys Ser Leu Ser Ser Glu Pro Cys Asp Leu Glu
     50                  55                  60

gaa att caa tta gtc tcc tgc tgc ttg tct gca aat gca gtg aaa atc   240
Glu Ile Gln Leu Val Ser Cys Cys Leu Ser Ala Asn Ala Val Lys Ile
 65                  70                  75                  80

cta gct cag aat ctt cac aat ttg gtc aaa ctg agc att ctt gat tta   288
Leu Ala Gln Asn Leu His Asn Leu Val Lys Leu Ser Ile Leu Asp Leu
                 85                  90                  95

tca gaa aat tac ctg gaa aaa gat gga aat gaa gct ctt cat gaa ctg   336
Ser Glu Asn Tyr Leu Glu Lys Asp Gly Asn Glu Ala Leu His Glu Leu
            100                 105                 110

atc gac agg atg aac gtg cta gaa cag ctc acc gca ctg atg ctg ccc   384
Ile Asp Arg Met Asn Val Leu Glu Gln Leu Thr Ala Leu Met Leu Pro
        115                 120                 125

tgg ggc tgt gac gtg caa ggc agc ctg agc agc ctg ttg aaa cat ttg   432
Trp Gly Cys Asp Val Gln Gly Ser Leu Ser Ser Leu Leu Lys His Leu
    130                 135                 140

gag gag gtc cca caa ctc gtc aag ctt ggg ttg aaa aac tgg aga ctc   480
Glu Glu Val Pro Gln Leu Val Lys Leu Gly Leu Lys Asn Trp Arg Leu
145                 150                 155                 160

aca gat aca gag att aga att tta ggt gca ttt ttt gga aag aac cct   528
Thr Asp Thr Glu Ile Arg Ile Leu Gly Ala Phe Phe Gly Lys Asn Pro
                165                 170                 175

ctg aaa aac ttc cag cag ttg aat ttg gcg gga aat cgt gtg agc agt   576
Leu Lys Asn Phe Gln Gln Leu Asn Leu Ala Gly Asn Arg Val Ser Ser
            180                 185                 190

gat gga tgg ctt gcc ttc atg ggt gta ttt gag aat ctt aag           618
Asp Gly Trp Leu Ala Phe Met Gly Val Phe Glu Asn Leu Lys
        195                 200                 205
```

<210> 182
<211> 206
<212> PRT
<213> Homo sapiens

<400> 182
Gly Asn Leu Lys Asn Leu Thr Lys Leu Ile Met Asp Asn Ile Lys Met
1 5 10 15
Asn Glu Glu Asp Ala Ile Lys Leu Ala Glu Gly Leu Lys Asn Leu Lys
20 25 30
Lys Met Cys Leu Phe His Leu Thr His Leu Ser Asp Ile Gly Glu Gly
35 40 45
Met Asp Tyr Ile Val Lys Ser Leu Ser Ser Glu Pro Cys Asp Leu Glu
50 55 60
Glu Ile Gln Leu Val Ser Cys Cys Leu Ser Ala Asn Ala Val Lys Ile
65 70 75 80
Leu Ala Gln Asn Leu His Asn Leu Val Lys Leu Ser Ile Leu Asp Leu
85 90 95
Ser Glu Asn Tyr Leu Glu Lys Asp Gly Asn Glu Ala Leu His Glu Leu
100 105 110
Ile Asp Arg Met Asn Val Leu Glu Gln Leu Thr Ala Leu Met Leu Pro
115 120 125
Trp Gly Cys Asp Val Gln Gly Ser Leu Ser Ser Leu Leu Lys His Leu
130 135 140
Glu Glu Val Pro Gln Leu Val Lys Leu Gly Leu Lys Asn Trp Arg Leu
145 150 155 160
Thr Asp Thr Glu Ile Arg Ile Leu Gly Ala Phe Phe Gly Lys Asn Pro
165 170 175
Leu Lys Asn Phe Gln Gln Leu Asn Leu Ala Gly Asn Arg Val Ser Ser
180 185 190
Asp Gly Trp Leu Ala Phe Met Gly Val Phe Glu Asn Leu Lys
195 200 205

<210> 183
<211> 165
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(165)

<400> 183
acc tac att ccc agc agg gct gta tct ttg ttc ttc aac tgg aag cag 48
Thr Tyr Ile Pro Ser Arg Ala Val Ser Leu Phe Phe Asn Trp Lys Gln
1 5 10 15

gaa ttc agg act ctg gag gtc aca ctc cgg gat ttc agc aag ttg aat 96
Glu Phe Arg Thr Leu Glu Val Thr Leu Arg Asp Phe Ser Lys Leu Asn
20 25 30

aag caa gat atc aga tat ctg ggg aaa ata ttc agc tct gcc aca agc 144
Lys Gln Asp Ile Arg Tyr Leu Gly Lys Ile Phe Ser Ser Ala Thr Ser
35 40 45

ctc agg ctg caa ata aag aga 165

Leu Arg Leu Gln Ile Lys Arg
50 55

<210> 184
<211> 55
<212> PRT
<213> Homo sapiens

<400> 184
Thr Tyr Ile Pro Ser Arg Ala Val Ser Leu Phe Phe Asn Trp Lys Gln
1 5 10 15
Glu Phe Arg Thr Leu Glu Val Thr Leu Arg Asp Phe Ser Lys Leu Asn
20 25 30
Lys Gln Asp Ile Arg Tyr Leu Gly Lys Ile Phe Ser Ser Ala Thr Ser
35 40 45
Leu Arg Leu Gln Ile Lys Arg
50 55

<210> 185
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 185
gaaatgtgct cgcaggagg 19

<210> 186
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 186
gatgagcttc tgacaggccc 20

<210> 187
<211> 3063
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(2385)

<221> CDS
<222> (2389)...(2928)

<400> 187

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tgt gaa atg tgc tcg cag gag gct ttt cag gca cag agg agc cag ctg   48
Cys Glu Met Cys Ser Gln Glu Ala Phe Gln Ala Gln Arg Ser Gln Leu
 1               5                  10                  15

gtc gag ctg ctg gtc tca ggg tcc ctg gaa ggc ttc gag agt gtc ctg   96
Val Glu Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu
            20                  25                  30

gac tgg ctg ctg tcc tgg gag gtc ctc tcc tgg gag gac tac gag ggc   144
Asp Trp Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly
        35                  40                  45

ttc cac ctc ctg ggc cag cct ctc tcc cac ttg gcc agg cgc ctt ctg   192
Phe His Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu
    50                  55                  60

gac acc gtc tgg aat aag ggt act tgg gcc tgt cag aag ctc atc gcg   240
Asp Thr Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu Ile Ala
65                  70                  75                  80

gct gcc caa gaa gcc cag gcc gac agc cag tcc ccc aag ctg cat ggc   288
Ala Ala Gln Glu Ala Gln Ala Asp Ser Gln Ser Pro Lys Leu His Gly
                85                  90                  95

tgc tgg gac ccc cac tcg ctc cac cca gcc cga gac ctg cag agt cac   336
Cys Trp Asp Pro His Ser Leu His Pro Ala Arg Asp Leu Gln Ser His
            100                 105                 110

cgg cca gcc att gtc agg agg ctc cac agc cat gtg gag aac atg ctg   384
Arg Pro Ala Ile Val Arg Arg Leu His Ser His Val Glu Asn Met Leu
        115                 120                 125

gac ctg gca tgg gag cgg ggt ttc gtc agc cag tat gaa tgt gat gaa   432
Asp Leu Ala Trp Glu Arg Gly Phe Val Ser Gln Tyr Glu Cys Asp Glu
    130                 135                 140

atc agg ttg ccg atc ttc aca ccg tcc cag agg gca aga agg ctg ctt   480
Ile Arg Leu Pro Ile Phe Thr Pro Ser Gln Arg Ala Arg Arg Leu Leu
145                 150                 155                 160

gat ctt gcc acg gtg aaa gcg aat gga ttg gct gcc ttc ctt cta caa   528
Asp Leu Ala Thr Val Lys Ala Asn Gly Leu Ala Ala Phe Leu Leu Gln
                165                 170                 175

cat gtt cag gaa tta cca gtc cca ttg gcc ctg cct ttg gaa gct gcc   576
His Val Gln Glu Leu Pro Val Pro Leu Ala Leu Pro Leu Glu Ala Ala
            180                 185                 190

aca tgc aag aag tat atg gcc aag ctg agg acc acg gtg tct gct cag   624
Thr Cys Lys Lys Tyr Met Ala Lys Leu Arg Thr Thr Val Ser Ala Gln
        195                 200                 205
```

tct cgc ttc ctc agt acc tat gat gga gca gag acg ctc tgc ctg gag 672
Ser Arg Phe Leu Ser Thr Tyr Asp Gly Ala Glu Thr Leu Cys Leu Glu
210 215 220

gac ata tac aca gag aat gtc ctg gag gtc tgg gca gat gtg ggc atg 720
Asp Ile Tyr Thr Glu Asn Val Leu Glu Val Trp Ala Asp Val Gly Met
225 230 235 240

gct gga ccc ccg cag aag agc cca gcc acc ctg ggc ctg gag gag ctc 768
Ala Gly Pro Pro Gln Lys Ser Pro Ala Thr Leu Gly Leu Glu Glu Leu
245 250 255

ttc agc acc cct ggc cac ctc aat gac gat gcg gac act gtg ctg gtg 816
Phe Ser Thr Pro Gly His Leu Asn Asp Asp Ala Asp Thr Val Leu Val
260 265 270

gtg ggt gag gcg ggc agt ggc aag agc acg ctc ctg cag cgg ctg cac 864
Val Gly Glu Ala Gly Ser Gly Lys Ser Thr Leu Leu Gln Arg Leu His
275 280 285

ttg ctg tgg gct gca ggg caa gac ttc cag gaa ttt ctc ttt gtc ttc 912
Leu Leu Trp Ala Ala Gly Gln Asp Phe Gln Glu Phe Leu Phe Val Phe
290 295 300

cca ttc agc tgc cgg cag ctg cag tgc atg gcc aaa cca ctc tct gtg 960
Pro Phe Ser Cys Arg Gln Leu Gln Cys Met Ala Lys Pro Leu Ser Val
305 310 315 320

cgg act cta ctc ttt gag cac tgc tgt tgg cct gat gtt ggt caa gaa 1008
Arg Thr Leu Leu Phe Glu His Cys Cys Trp Pro Asp Val Gly Gln Glu
325 330 335

gac atc ttc cag tta ctc ctt gac cac cct gac cgt gtc ctg tta acc 1056
Asp Ile Phe Gln Leu Leu Leu Asp His Pro Asp Arg Val Leu Leu Thr
340 345 350

ttt gat ggc ttt gac gag ttc aag ttc agg ttc acg gat cgt gaa cgc 1104
Phe Asp Gly Phe Asp Glu Phe Lys Phe Arg Phe Thr Asp Arg Glu Arg
355 360 365

cac tgc tcc ccg acc gac ccc acc tct gtc cag acc ctg ctc ttc aac 1152
His Cys Ser Pro Thr Asp Pro Thr Ser Val Gln Thr Leu Leu Phe Asn
370 375 380

ctt ctg cag ggc aac ctg ctg aag aat gcc cgc aag gtg gtg acc agc 1200
Leu Leu Gln Gly Asn Leu Leu Lys Asn Ala Arg Lys Val Val Thr Ser
385 390 395 400

cgt ccg gcc gct gtg tcg gcg ttc ctc agg aag tac atc cgc acc gag 1248
Arg Pro Ala Ala Val Ser Ala Phe Leu Arg Lys Tyr Ile Arg Thr Glu
405 410 415

```
ttc aac ctc aag ggc ttc tct gaa cag ggc atc gag ctg tac ctg agg   1296
Phe Asn Leu Lys Gly Phe Ser Glu Gln Gly Ile Glu Leu Tyr Leu Arg
            420                 425                 430

aag cgc cat cat gag ccc ggg gtg gcg gac cgc ctc atc cgc ctg ctc   1344
Lys Arg His His Glu Pro Gly Val Ala Asp Arg Leu Ile Arg Leu Leu
        435                 440                 445

caa gag acc tca gcc ctg cac ggt ttg tgc cac ctg cct gtc ttc tca   1392
Gln Glu Thr Ser Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser
    450                 455                 460

tgg atg gtg tcc aaa tgc cac cag gaa ctg ttg ctg cag gag ggg ggg   1440
Trp Met Val Ser Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly
465                 470                 475                 480

tcc cca aag acc act aca gat atg tac ctg ctg att ctg cag cat ttt   1488
Ser Pro Lys Thr Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe
                485                 490                 495

ctg ctg cat gcc acc ccc cca gac tca gct tcc caa ggt ctg gga ccc   1536
Leu Leu His Ala Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro
            500                 505                 510

agt ctt ctt cgg ggc cgc ctc ccc acc ctc ctg cac ctg ggc aga ctg   1584
Ser Leu Leu Arg Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu
        515                 520                 525

gct ctg tgg ggc ctg ggc atg tgc tgc tac gtg ttc tca gcc cag cag   1632
Ala Leu Trp Gly Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln
    530                 535                 540

ctc cag gca gca cag gtc agc cct gat gac att tct ctt ggc ttc ctg   1680
Leu Gln Ala Ala Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu
545                 550                 555                 560

gtg cgt gcc aaa ggt gtc gtg cca ggg agt acg gcg ccc ctg gaa ttc   1728
Val Arg Ala Lys Gly Val Val Pro Gly Ser Thr Ala Pro Leu Glu Phe
                565                 570                 575

ctt cac atc act ttc cag tgc ttc ttt gcc gcg ttc tac ctg gca ctc   1776
Leu His Ile Thr Phe Gln Cys Phe Phe Ala Ala Phe Tyr Leu Ala Leu
            580                 585                 590

agt gct gat gtg cca cca gct ttg ctc aga cac ctc ttc aat tgt ggc   1824
Ser Ala Asp Val Pro Pro Ala Leu Leu Arg His Leu Phe Asn Cys Gly
        595                 600                 605

agg cca ggc aac tca cca atg gcc agg ctc ctg ccc acg atg tgc atc   1872
Arg Pro Gly Asn Ser Pro Met Ala Arg Leu Leu Pro Thr Met Cys Ile
    610                 615                 620

cag gcc tcg gag gga aag gac agc agc gtg gca gct ttg ctg cag aag   1920
```

Gln Ala Ser Glu Gly Lys Asp Ser Ser Val Ala Ala Leu Leu Gln Lys
625 630 635 640

gcc gag ccg cac aac ctt cag atc aca gca gcc ttc ctg gca ggg ctg 1968
Ala Glu Pro His Asn Leu Gln Ile Thr Ala Ala Phe Leu Ala Gly Leu
645 650 655

ttg tcc cgg gag cac tgg ggc ctg ctg gct gag tgc cag aca tct gag 2016
Leu Ser Arg Glu His Trp Gly Leu Leu Ala Glu Cys Gln Thr Ser Glu
660 665 670

aag gcc ctg ctc cgg cgc cag gcc tgt gcc cgc tgg tgt ctg gcc cgc 2064
Lys Ala Leu Leu Arg Arg Gln Ala Cys Ala Arg Trp Cys Leu Ala Arg
675 680 685

agc ctc cgc aag cac ttc cac tcc atc ccg cca gct gca ccg ggt gag 2112
Ser Leu Arg Lys His Phe His Ser Ile Pro Pro Ala Ala Pro Gly Glu
690 695 700

gcc aag agc gtg cat gcc atg ccc ggg ttc atc tgg ctc atc cgg agc 2160
Ala Lys Ser Val His Ala Met Pro Gly Phe Ile Trp Leu Ile Arg Ser
705 710 715 720

ctg tac gag atg cag gag gag cgg ctg gct cgg aag gct gca cgt ggc 2208
Leu Tyr Glu Met Gln Glu Glu Arg Leu Ala Arg Lys Ala Ala Arg Gly
725 730 735

ctg aat gtt ggg cac ctc aag ttg aca ttt tgc agt gtg ggc ccc act 2256
Leu Asn Val Gly His Leu Lys Leu Thr Phe Cys Ser Val Gly Pro Thr
740 745 750

gag tgt gct gcc ctg gcc ttt gtg ctg cag cac ctc cgg cgg ccc gtg 2304
Glu Cys Ala Ala Leu Ala Phe Val Leu Gln His Leu Arg Arg Pro Val
755 760 765

gcc ctg cag ctg gac tac aac tct gtg ggt gac att ggc gtg gag cag 2352
Ala Leu Gln Leu Asp Tyr Asn Ser Val Gly Asp Ile Gly Val Glu Gln
770 775 780

ctg ctg cct tgc ctt ggt gtc tgc aag gct ctg taa ttc tgg ggc aac 2400
Leu Leu Pro Cys Leu Gly Val Cys Lys Ala Leu Phe Trp Gly Asn
785 790 795

aga gtg ggt gac gag ggg gcc cag gcc ctg gct gaa gcc ttg ggt gat 2448
Arg Val Gly Asp Glu Gly Ala Gln Ala Leu Ala Glu Ala Leu Gly Asp
800 805 810 815

cac cag agc ttg agg tgg ctc agc ctg gtg ggg aac aac att ggc agt 2496
His Gln Ser Leu Arg Trp Leu Ser Leu Val Gly Asn Asn Ile Gly Ser
820 825 830

gtg ggt gcc caa gcc ttg gca ctg atg ctg gca aag aac gtc atg cta 2544
Val Gly Ala Gln Ala Leu Ala Leu Met Leu Ala Lys Asn Val Met Leu

```
          835                 840                 845

gaa gaa ctc tgc ctg gag gag aac cat ctc cag gat gaa ggt gta tgt   2592
Glu Glu Leu Cys Leu Glu Glu Asn His Leu Gln Asp Glu Gly Val Cys
        850                 855                 860

tct ctc gca gaa gga ctg aag aaa aat tca agt ttg aaa atc ctg aac   2640
Ser Leu Ala Glu Gly Leu Lys Lys Asn Ser Ser Leu Lys Ile Leu Asn
    865                 870                 875

ata aaa att cat gct tcg gga ttc aac aaa ctc ttg gaa agc att ttc   2688
Ile Lys Ile His Ala Ser Gly Phe Asn Lys Leu Leu Glu Ser Ile Phe
880                 885                 890                 895

tgc atc ctc ctg gtt gtg gaa gca ttt ttc ctg cag aaa gtt gtc aag   2736
Cys Ile Leu Leu Val Val Glu Ala Phe Phe Leu Gln Lys Val Val Lys
                900                 905                 910

att ctt gaa gaa atg gta gtc agt tgg cta gag gtc agg ttg tcc aat   2784
Ile Leu Glu Glu Met Val Val Ser Trp Leu Glu Val Arg Leu Ser Asn
            915                 920                 925

aac tgc atc acc tac cta ggg gca gaa gcc ctc ctg cag gcc ctt gaa   2832
Asn Cys Ile Thr Tyr Leu Gly Ala Glu Ala Leu Leu Gln Ala Leu Glu
        930                 935                 940

agg aat gac acc atc ctg gaa gtc tgg ctc cga ggg aac act ttc tct   2880
Arg Asn Asp Thr Ile Leu Glu Val Trp Leu Arg Gly Asn Thr Phe Ser
    945                 950                 955

cta gag gag gtt gac aag ctc ggc tgc agg gac acc aga ctc ttg ctt   2928
Leu Glu Glu Val Asp Lys Leu Gly Cys Arg Asp Thr Arg Leu Leu Leu
960                 965                 970                 975

tgaagtctcc gggaggatgt tcgtctcagt ttgtttgtga gcaggctgtg agtttgggcc 2988
ccagaggctg ggtgacatgt gttggcagcc tcttcaaaat gagccctgtc ctgcctaagg 3048
ctgaacttgt tttct                                                  3063

<210> 188
<211> 795
<212> PRT
<213> Homo sapiens

<400> 188
Cys Glu Met Cys Ser Gln Glu Ala Phe Gln Ala Gln Arg Ser Gln Leu
 1               5                  10                  15
Val Glu Leu Leu Val Ser Gly Ser Leu Glu Gly Phe Glu Ser Val Leu
            20                  25                  30
Asp Trp Leu Leu Ser Trp Glu Val Leu Ser Trp Glu Asp Tyr Glu Gly
        35                  40                  45
Phe His Leu Leu Gly Gln Pro Leu Ser His Leu Ala Arg Arg Leu Leu
    50                  55                  60
Asp Thr Val Trp Asn Lys Gly Thr Trp Ala Cys Gln Lys Leu Ile Ala
```

```
65                  70                  75                  80
Ala Ala Gln Glu Ala Gln Ala Asp Ser Gln Ser Pro Lys Leu His Gly
                85                  90                  95
Cys Trp Asp Pro His Ser Leu His Pro Ala Arg Asp Leu Gln Ser His
            100                 105                 110
Arg Pro Ala Ile Val Arg Arg Leu His Ser His Val Glu Asn Met Leu
        115                 120                 125
Asp Leu Ala Trp Glu Arg Gly Phe Val Ser Gln Tyr Glu Cys Asp Glu
    130                 135                 140
Ile Arg Leu Pro Ile Phe Thr Pro Ser Gln Arg Ala Arg Arg Leu Leu
145                 150                 155                 160
Asp Leu Ala Thr Val Lys Ala Asn Gly Leu Ala Ala Phe Leu Leu Gln
                165                 170                 175
His Val Gln Glu Leu Pro Val Pro Leu Ala Leu Pro Leu Glu Ala Ala
            180                 185                 190
Thr Cys Lys Lys Tyr Met Ala Lys Leu Arg Thr Thr Val Ser Ala Gln
        195                 200                 205
Ser Arg Phe Leu Ser Thr Tyr Asp Gly Ala Glu Thr Leu Cys Leu Glu
    210                 215                 220
Asp Ile Tyr Thr Glu Asn Val Leu Glu Val Trp Ala Asp Val Gly Met
225                 230                 235                 240
Ala Gly Pro Pro Gln Lys Ser Pro Ala Thr Leu Gly Leu Glu Glu Leu
                245                 250                 255
Phe Ser Thr Pro Gly His Leu Asn Asp Asp Ala Asp Thr Val Leu Val
            260                 265                 270
Val Gly Glu Ala Gly Ser Gly Lys Ser Thr Leu Leu Gln Arg Leu His
        275                 280                 285
Leu Leu Trp Ala Ala Gly Gln Asp Phe Gln Glu Phe Leu Phe Val Phe
    290                 295                 300
Pro Phe Ser Cys Arg Gln Leu Gln Cys Met Ala Lys Pro Leu Ser Val
305                 310                 315                 320
Arg Thr Leu Leu Phe Glu His Cys Cys Trp Pro Asp Val Gly Gln Glu
                325                 330                 335
Asp Ile Phe Gln Leu Leu Leu Asp His Pro Asp Arg Val Leu Leu Thr
            340                 345                 350
Phe Asp Gly Phe Asp Glu Phe Lys Phe Arg Phe Thr Asp Arg Glu Arg
        355                 360                 365
His Cys Ser Pro Thr Asp Pro Thr Ser Val Gln Thr Leu Leu Phe Asn
    370                 375                 380
Leu Leu Gln Gly Asn Leu Leu Lys Asn Ala Arg Lys Val Val Thr Ser
385                 390                 395                 400
Arg Pro Ala Ala Val Ser Ala Phe Leu Arg Lys Tyr Ile Arg Thr Glu
                405                 410                 415
Phe Asn Leu Lys Gly Phe Ser Glu Gln Gly Ile Glu Leu Tyr Leu Arg
            420                 425                 430
Lys Arg His His Glu Pro Gly Val Ala Asp Arg Leu Ile Arg Leu Leu
        435                 440                 445
Gln Glu Thr Ser Ala Leu His Gly Leu Cys His Leu Pro Val Phe Ser
    450                 455                 460
Trp Met Val Ser Lys Cys His Gln Glu Leu Leu Leu Gln Glu Gly Gly
465                 470                 475                 480
Ser Pro Lys Thr Thr Thr Asp Met Tyr Leu Leu Ile Leu Gln His Phe
                485                 490                 495
```

```
Leu Leu His Ala Thr Pro Pro Asp Ser Ala Ser Gln Gly Leu Gly Pro
            500                 505                 510
Ser Leu Leu Arg Gly Arg Leu Pro Thr Leu Leu His Leu Gly Arg Leu
        515                 520                 525
Ala Leu Trp Gly Leu Gly Met Cys Cys Tyr Val Phe Ser Ala Gln Gln
    530                 535                 540
Leu Gln Ala Ala Gln Val Ser Pro Asp Asp Ile Ser Leu Gly Phe Leu
545                 550                 555                 560
Val Arg Ala Lys Gly Val Val Pro Gly Ser Thr Ala Pro Leu Glu Phe
                565                 570                 575
Leu His Ile Thr Phe Gln Cys Phe Phe Ala Ala Phe Tyr Leu Ala Leu
            580                 585                 590
Ser Ala Asp Val Pro Pro Ala Leu Leu Arg His Leu Phe Asn Cys Gly
        595                 600                 605
Arg Pro Gly Asn Ser Pro Met Ala Arg Leu Leu Pro Thr Met Cys Ile
    610                 615                 620
Gln Ala Ser Glu Gly Lys Asp Ser Ser Val Ala Ala Leu Leu Gln Lys
625                 630                 635                 640
Ala Glu Pro His Asn Leu Gln Ile Thr Ala Ala Phe Leu Ala Gly Leu
                645                 650                 655
Leu Ser Arg Glu His Trp Gly Leu Leu Ala Glu Cys Gln Thr Ser Glu
            660                 665                 670
Lys Ala Leu Leu Arg Arg Gln Ala Cys Ala Arg Trp Cys Leu Ala Arg
        675                 680                 685
Ser Leu Arg Lys His Phe His Ser Ile Pro Pro Ala Ala Pro Gly Glu
    690                 695                 700
Ala Lys Ser Val His Ala Met Pro Gly Phe Ile Trp Leu Ile Arg Ser
705                 710                 715                 720
Leu Tyr Glu Met Gln Glu Glu Arg Leu Ala Arg Lys Ala Ala Arg Gly
                725                 730                 735
Leu Asn Val Gly His Leu Lys Leu Thr Phe Cys Ser Val Gly Pro Thr
            740                 745                 750
Glu Cys Ala Ala Leu Ala Phe Val Leu Gln His Leu Arg Arg Pro Val
        755                 760                 765
Ala Leu Gln Leu Asp Tyr Asn Ser Val Gly Asp Ile Gly Val Glu Gln
    770                 775                 780
Leu Leu Pro Cys Leu Gly Val Cys Lys Ala Leu
785                 790                 795
```


<210> 189
<211> 180
<212> PRT
<213> Homo sapiens

<400> 189

```
Phe Trp Gly Asn Arg Val Gly Asp Glu Gly Ala Gln Ala Leu Ala Glu
 1               5                  10                  15
Ala Leu Gly Asp His Gln Ser Leu Arg Trp Leu Ser Leu Val Gly Asn
            20                  25                  30
Asn Ile Gly Ser Val Gly Ala Gln Ala Leu Ala Leu Met Leu Ala Lys
        35                  40                  45
Asn Val Met Leu Glu Glu Leu Cys Leu Glu Glu Asn His Leu Gln Asp
```

```
    50                  55                  60
Glu Gly Val Cys Ser Leu Ala Glu Gly Leu Lys Lys Asn Ser Ser Leu
65                  70                  75                  80
Lys Ile Leu Asn Ile Lys Ile His Ala Ser Gly Phe Asn Lys Leu Leu
                85                  90                  95
Glu Ser Ile Phe Cys Ile Leu Leu Val Val Glu Ala Phe Phe Leu Gln
            100                 105                 110
Lys Val Val Lys Ile Leu Glu Glu Met Val Val Ser Trp Leu Glu Val
        115                 120                 125
Arg Leu Ser Asn Asn Cys Ile Thr Tyr Leu Gly Ala Glu Ala Leu Leu
    130                 135                 140
Gln Ala Leu Glu Arg Asn Asp Thr Ile Leu Glu Val Trp Leu Arg Gly
145                 150                 155                 160
Asn Thr Phe Ser Leu Glu Glu Val Asp Lys Leu Gly Cys Arg Asp Thr
                165                 170                 175
Arg Leu Leu Leu
            180
```

<210> 190
<211> 721
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (193)...(612)

<400> 190

```
cctggggttc ctgcacatta ccttccgtgc ttttttgccg ctttctactt ggctgtcagt 60
gctgacacat cggtggcctc tctcaagcac cttttcagct gtggccggct gggcagctca 120
ctgctgggaa ggctgctgcc caacctgtgt atccagggct ccagagtcaa gaagggcagc 180
gaagcagccc tg ctg cag aag gct gag cca cac aac ctg caa atc aca gca 231
             Leu Gln Lys Ala Glu Pro His Asn Leu Gln Ile Thr Ala
              1               5                  10

gcc ttc cta gca ggt ctg ttg tcc cag cag cat cgg gac ctg ttg gct  279
Ala Phe Leu Ala Gly Leu Leu Ser Gln Gln His Arg Asp Leu Leu Ala
     15                  20                  25

gca tgc cag gtc tcc gag agg gta ctg ctc cag cgt cag gca cgt gcc  327
Ala Cys Gln Val Ser Glu Arg Val Leu Leu Gln Arg Gln Ala Arg Ala
 30                  35                  40                  45

cgc tcg tgt ctg gcc cac agc ctc cgc gag cac ttc cat tcc atc ccg  375
Arg Ser Cys Leu Ala His Ser Leu Arg Glu His Phe His Ser Ile Pro
                 50                  55                  60

cct gcc gtg ccc ggt gag acc aag agc atg cat gct atg ccg ggc ttc  423
Pro Ala Val Pro Gly Glu Thr Lys Ser Met His Ala Met Pro Gly Phe
             65                  70                  75

att tgg ctc atc cgt agc ctg tac gag atg cag gag gag cag ttg gcc  471
```

```
Ile Trp Leu Ile Arg Ser Leu Tyr Glu Met Gln Glu Glu Gln Leu Ala
         80                  85                  90

cag gag gct gtc cgt cgc ttg gac atc ggg cac ctg aag ttg aca ttt   519
Gln Glu Ala Val Arg Arg Leu Asp Ile Gly His Leu Lys Leu Thr Phe
     95                 100                 105

tgc aga gtg ggc cct gca gag tgt gct gca ctg gcc ttt gta ctg caa   567
Cys Arg Val Gly Pro Ala Glu Cys Ala Ala Leu Ala Phe Val Leu Gln
110                 115                 120                 125

cat ctc cag cgg cct gtg gcc cta cag ctg gat tac aac tct gtg       612
His Leu Gln Arg Pro Val Ala Leu Gln Leu Asp Tyr Asn Ser Val
                130                 135                 140

ggagatgttg ggagtggaac agctgcgacc gtgcctttgg ggtctgcaca gctctgtagt 672
gagtgtgaca aggtcttgcc gattgggcct gtggcaaatg ctactgtca              721

<210> 191
<211> 140
<212> PRT
<213> Mus musculus

<400> 191
Leu Gln Lys Ala Glu Pro His Asn Leu Gln Ile Thr Ala Ala Phe Leu
 1               5                  10                  15
Ala Gly Leu Leu Ser Gln Gln His Arg Asp Leu Leu Ala Ala Cys Gln
            20                  25                  30
Val Ser Glu Arg Val Leu Leu Gln Arg Gln Ala Arg Ala Arg Ser Cys
        35                  40                  45
Leu Ala His Ser Leu Arg Glu His Phe His Ser Ile Pro Pro Ala Val
    50                  55                  60
Pro Gly Glu Thr Lys Ser Met His Ala Met Pro Gly Phe Ile Trp Leu
65                  70                  75                  80
Ile Arg Ser Leu Tyr Glu Met Gln Glu Glu Gln Leu Ala Gln Glu Ala
                85                  90                  95
Val Arg Arg Leu Asp Ile Gly His Leu Lys Leu Thr Phe Cys Arg Val
            100                 105                 110
Gly Pro Ala Glu Cys Ala Ala Leu Ala Phe Val Leu Gln His Leu Gln
        115                 120                 125
Arg Pro Val Ala Leu Gln Leu Asp Tyr Asn Ser Val
    130                 135                 140


<210> 192
<211> 419
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)...(417)
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<400> 192

```
ctg cag aag gct gag cca cac aac ctg cag atc aca gca gcc ttc cta   48
Leu Gln Lys Ala Glu Pro His Asn Leu Gln Ile Thr Ala Ala Phe Leu
 1               5                  10                  15

gca ggt ctg ttg tcc cag cag cat cgg gac ctg ttg gct gca tgc cag   96
Ala Gly Leu Leu Ser Gln Gln His Arg Asp Leu Leu Ala Ala Cys Gln
             20                  25                  30

atc tcc gag agg gtg ctg ctc cag cgt cag gca cgt gcc cgc tcg tgt   144
Ile Ser Glu Arg Val Leu Leu Gln Arg Gln Ala Arg Ala Arg Ser Cys
         35                  40                  45

ctg gcc cac agc ctc cgc gag cac ttc cat tcc atc ccg cct gcc gtg   192
Leu Ala His Ser Leu Arg Glu His Phe His Ser Ile Pro Pro Ala Val
     50                  55                  60

ccc ggt gag acc aag agc atg cat gct atg ccg ggc ttt att tgg ctc   240
Pro Gly Glu Thr Lys Ser Met His Ala Met Pro Gly Phe Ile Trp Leu
 65                  70                  75                  80

atc cgg agc ctg tac gag atg cag gag gag cag ttg gcc cag gag gct   288
Ile Arg Ser Leu Tyr Glu Met Gln Glu Glu Gln Leu Ala Gln Glu Ala
                 85                  90                  95

gtc cgt cgc ttg gac atc ggg cac ctg aag ttg aca ttt tgc aga gtg   336
Val Arg Arg Leu Asp Ile Gly His Leu Lys Leu Thr Phe Cys Arg Val
            100                 105                 110

ggc cct gca gag tgt gct gcg ctg gcc ttt gta ctg caa cat ctc cag   384
Gly Pro Ala Glu Cys Ala Ala Leu Ala Phe Val Leu Gln His Leu Gln
        115                 120                 125

cgg cct gtg gcc cta cag ctg gat tac aac tct gt                   419
Arg Pro Val Ala Leu Gln Leu Asp Tyr Asn Ser
    130                 135
```

<210> 193
<211> 139
<212> PRT
<213> Mus musculus

<400> 193

```
Leu Gln Lys Ala Glu Pro His Asn Leu Gln Ile Thr Ala Ala Phe Leu
 1               5                  10                  15
Ala Gly Leu Leu Ser Gln Gln His Arg Asp Leu Leu Ala Ala Cys Gln
            20                  25                  30
Ile Ser Glu Arg Val Leu Leu Gln Arg Gln Ala Arg Ala Arg Ser Cys
        35                  40                  45
Leu Ala His Ser Leu Arg Glu His Phe His Ser Ile Pro Pro Ala Val
    50                  55                  60
Pro Gly Glu Thr Lys Ser Met His Ala Met Pro Gly Phe Ile Trp Leu
```

```
65                  70                  75                  80
Ile Arg Ser Leu Tyr Glu Met Gln Glu Glu Gln Leu Ala Gln Glu Ala
                85                  90                  95
Val Arg Arg Leu Asp Ile Gly His Leu Lys Leu Thr Phe Cys Arg Val
            100                 105                 110
Gly Pro Ala Glu Cys Ala Ala Leu Ala Phe Val Leu Gln His Leu Gln
        115                 120                 125
Arg Pro Val Ala Leu Gln Leu Asp Tyr Asn Ser
    130                 135
```

<210> 194
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 194
ctgcagaagg ctgagccaca caacct 26

<210> 195
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 195
acagagttgt aatccagctg tagggccaca 30